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# Experimental three-dimensional design

Jacqueline O'Connell

# EXPERIMENTAL THREE-DIMENSIONAL DESIGN

BY JACQUELINE O'CONNELL

CANDIDATE FOR THE MASTER OF FINE ARTS DEGREE IN THE COLLEGE OF FINE AND APPLIED ARTS OF THE ROCHESTER INSTITUTE OF TECHNOLOGY.

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THIS THESIS IS DEDICATED TO DEVIN, ANN AND SEAN, WHO PATIENTLY WAITED AND WATCHED WHILE THIS WORK WAS IN PROGRESS.

## ACKNOWLEDGMENT

The author wishes to acknowledge the invaluable aid of her advisor, Professor Dezso Sekely, in planning and preparing this thesis, and the assistance of Professor James Smith in photographing both the student work and the work of the author.

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# INTRODUCTION

Does a systematic method of experimenting in creative art have any validity?

The basic problem contained in this thesis was to investigate the use of a scientific system in arriving at creative ideas in experimental art. The system was primarily designed for the student working within the confines of different materials and tools. The structures used a fundamental basic type of design and were not necessarily worked into finished art forms. The work was primarily done with two or more forms in 3-Dimensional arrangements in which five or six copies were repeated with only one factor varying -- for example, height, width, color, position, combination, etc. The level of workmanship was limited to being merely sufficient for the artist to perceive the idea, which the artist might further develop or modify or discard.

WHEN I PAINT AND CONSTRUCT, I TRY TO DEVELOP VISUAL ARTICULATION. I DO NOT THINK THEN ABOUT ABSTRACTION, AND JUST AS LITTLE ABOUT EXPRESSION. I DO NOT LOOK FOR ISMS, AND NOT AT FASHION.

I SEE THAT ART IS ESSENTIALLY PURPOSE AND SEEING, THAT FORM DEMANDS MULTIPLE PRESENTATIONS, MANIFOLD PERFORMANCE. I DO NOT SEE THAT FORCED INDIVIDUALISM OR FORCED EXALTATION IS THE SOURCE OF CONVINCING FORMULATION OF LASTING MEANING. IN MY OWN WORK I AM CONTENT TO COMPETE WITH MYSELF, AND TO SEARCH WITH SIMPLE PALETTE AND WITH SIMPLE COLOR FOR MANIFOLD INSTRUMENTATION.

SO I DARE FURTHER VARIANTS. [1]

[1] GYORGY KEPES, (ED), THE VISUAL ARTS TODAY, MIDDLETOWN, CONNECTICUT; WESLEYAN UNIVERSITY, PRESS 1960. P. 105, QUOTING JOSEPH ALBERS.

## THE PURPOSE

It was the purpose of this thesis to investigate if the systematic method of the use of one-variable control experiments was valid in 3-Dimensional Design. Such a method attempted:

1. To develop a method of teaching 3-Dimensional Design in which the student would experiment in a logical, step-by-step fashion rather than a random one.

2. To teach about tools, their character and how to use them.

3. To teach about materials, their character and how to use them and combine them.

4. To develop experiences, ideas, and background for the student for future work in sculpture, architecture and indistrial design.

5. To recognize the scientific method as a natural force, a rhythmic development of an idea with variations and deviations as logical and eventful as they are in nature.

6. To use tools and materials instead of paper and pencil to search for and sketch ideas, no matter how abbreviated.

7. To search out with simple forms the great simple relationships that make up dynamic beauty.

DESIGNING AND MAKING NEED NOT BE SEPARATE. ONE WAY IS TO START WORKING DIRECTLY IN MATERIALS WITH YOUR WORK SUGGESTING HOW TO PROCEED. IT IS A SORT OF GAME IN WHICH EACH MOVE DETERMINES THE POSSIBLE NEXT MOVE. YOU WORK ALONG IN A STATE IN WHICH CONSCIOUS DIRECTION AND INTUITION ARE DELICATELY BALANCED, UNTIL YOU GRADUALLY BRING OUT A FORM YOU COULD NEVER HAVE IMAGINED TO BEGIN WITH. THE FORMAL CAUSE IS STILL THERE, ALTHOUGH IT IS SOMETHING THAT YOU PARTLY DISCOVER AS YOU GO ALONG RATHER THAN SOMETHING THOUGHT OUT BEFOREHAND. [2]

[2]ROBERT SCOTT, DESIGN FUNDAMENTALS, NEW YORK, MCGRAW-HILL BOOK COMPANY, 1951, P. 5.

CONSTRUCTION BEGINS IN THE MOST PRIMITIVE MANNER. THE ELEMENTARY METHODS OF CONSTRUCTION ARE RELATED TO THE ELEMENTS OF LIFE, THE FORCES OF LIFE. AN EVENT OR SERIES OF EVENTS MAY BE ORDERED BY A RHYTHM. THE SAME EVENT CAN BE REPEATED VARYING ITS TEMPORAL OR SPATIAL POSITION. AN EVENT CAN BE INVERTED AND TAKE ON A NEW, STRANGE CHARACTER. A WHOLE SYSTEM CAN BE CHANGED BY INVERSIONS. HOWEVER, CONSTRUCTION MUST START WITH THE SIMPLEST AND MOST PRACTICAL MEANS AND TO AVOID CONFUSION AIM AT THE SIMPLEST RESULTS. SOMETIMES THE WORK IS THE PRODUCT OF A SLOW DIRECTION (MONOTONY IS A POWERFUL FORCE), OR IT IS BUSY WITH CHANGE AND SEEMING INSTABILITY. (PICASSO'S SUM OF DESTRUCTIONS.)

[3] KENNETH MARTIN, "CONSTRUCTION FROM WITHIN", STRUCTURE, SIXTH SERIES, NUMBER 1, 1964.

## DEFINITION OF TERMS USED

A DEFINITION OF TERMS USED IN DESCRIBING THE MAIN ASPECTS OF THIS STUDY ARE AS FOLLOWS:

THREE DIMENSIONAL DESIGN:

ACTUAL SINGLE OR MULTIPLE MATERIALS ARRANGED TOGETHER TO FORM LENGTH, WIDTH AND DEPTH RATHER THAN JUST THE ACTUAL TWO DIMENSIONS (LENGTH AND WIDTH) OF DESIGNS CREATED ON PAPER.

EXPERIMENTAL DESIGN:

THE MANIPULATION OF FORMS IN A MANNER NOT DETERMINED BY A DEFINITE PURPOSE SUCH AS A LAMP, MUSIC RACK, ETC.

ONE-VARIABLE:

THE CHANGE OF ONLY A SINGLE ELEMENT SUCH AS SIZE, COLOR, TEXTURE, POSITION IN THE SERIES OF EXPERIMENTS, (5 OR 6 IN THE SERIES).

TOOLS AND TECHNIQUES:

THE POWER EQUIPMENT AND THE HAND TOOLS NECESSARY TO HANDLE WOOD, METAL, PLASTIC, ETC., AND THE NATURE OF THE DEMANDS MADE ON THE BOTH MATERIAL AND THE TOOLS BY THE ARTIST'S IDEAS.

MATERIALS ARE RUGGED INDIVIDUALISTS. YOU CAN GET THEM TO DO ALL SORTS OF THINGS THROUGH COOPERATION, BUT THEY WILL NOT BE FORCED. YOU HAVE TO UNDERSTAND THEIR NATURE AND WORK WITH IT, NOT AGAINST IT.

TOOLS AND MACHINES ARE ALSO INDIVIDUALISTS. THE FORM IS GOING TO BE INFLUENCED BY THE TOOLS SHAPING IT.[4]

[4]ROBERT SCOTT, DESIGN FUNDAMENTALS, NEW YORK, MCGRAW-HILL BOOK COMPANY, 1951, P. 6.

# PROCEDURE

THE FOLLOWING PROCEDURE WAS USED IN THIS STUDY:

1. THE EXPERIMENTAL METHOD WAS INTRODUCED BY PROF. DESZO SEKELY TO 30 SOPHOMORES IN 3-DIMENSIONAL DESIGN AT THE ROCHESTER INSTITUTE OF TECHNOLOGY IN THE SPRING QUARTER, 1966.

2. THE RESULTS WERE INVESTIGATED BY THIS WRITER.

3. THE WRITER FOLLOWED THIS INVESTIGATION OF CLASS WORK BY READING LITERATURE RELATED TO EXPERIMENTAL DESIGN. (SEE BIBLIOGRAPHY)

4. THE CONTROLLED, EXPERIMENTAL METHOD WAS OBSERVED BY THIS WRITER IN THE SUMMER SESSION CLASS AT THE ROCHESTER INSTITUTE OF TECHNOLOGY IN 1966 WHEN 11 UNDERGRADUATE AND GRADUATE STUDENTS WERE ENROLLED.

5. AT THE SAME TIME THAT NO. 4 ABOVE WAS IN PROGRESS, THE WRITER HERSELF, AS AN INDIVIDUAL DESIGNER, INVESTIGATED THE SAME EXPERIMENTAL METHOD.

6. STUDENT AND INDIVIDUAL WORK SELECTED FOR STUDY BY THE WRITER WAS RECORDED BY PHOTOGRAPHS.

7. BOTH CLASSROOM WORK OF STUDENTS AND INDIVIDUAL WORK OF THE WRITER WERE STUDIED AND ANALYZED.

8. GRADUATE STUDENTS WERE GIVEN A SET OF QUESTIONS TO DETERMINE THEIR OPINIONS OF THIS APPROACH. (APPENDIX)

# EXPERIMENTS

The following photographs and descriptions are of the single variable experiments and the experimental sculpture that sometimes followed. It should be remembered, however, that the level of workmanship is limited to being merely sufficient for the artist to perceive the idea in the work which the artist may develop further or modify or discard.

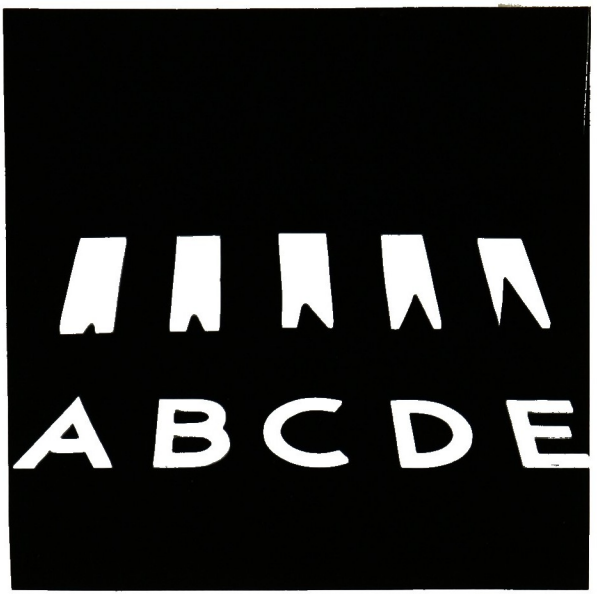
Three separate groups of experiments are recorded; the Sophomore, the Advanced and the author's own.

JOSEPH ALBERS WAS ONCE ASKED IF THE CONFINES HE HAS SET FOR HIMSELF IN HIS HOMAGE TO THE SQUARE PAINTINGS HAD GIVEN HIM AMPLE LATITUDE. TO THIS HE ANSWERED, "THERE IS PLENTY OF LEEWAY FOR ME. THERE ARE SOMETIMES THREE SQUARES, SOMETIMES FOUR, AND MAYBE SOMETIMES TWO. THEY ARE NOT AUTOMATIC. THEY DO NOT COME BY THEMSELVES. SOMETIMES IT'S SMALL, LARGE, SMALL OR LARGE, SMALL, LARGE; INSIDE HEAVY; OUTSIDE HEAVY; HEAVY ABOVE; HEAVY BELOW; GIVING HERE QUANTITY; TAKING THERE; UNTIL EACH SQUARE IS AFFECTING THE OTHER ALL IT CAN, AND VICE-VERSA. SOMETIMES I DEAL WITH THE SAME COLORS IN MANY PICTURES, CHANGING JUST PLACEMENT AND QUANTITY. CLEAR THINKING AND SEEING WON'T SPOIL EMOTIONS."[5]

[5]JOSEPH ALBERS, "HOMAGE TO THE SQUARE," ART NEWS, VOL. 64, JANUARY 1966, P. 48 - 51.

# SOPHOMORE EXPERIMENTS

## EXPERIMENT NO. 1

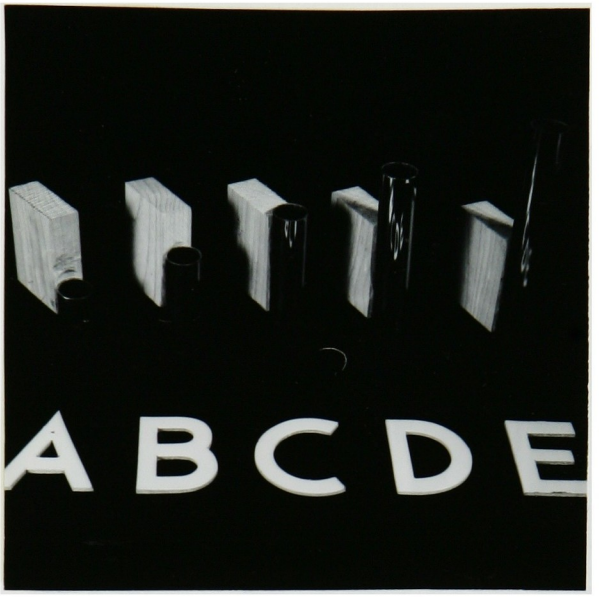



DESCRIPTION: BALSA RECTANGLE SLICED BY SINGLE TRIANGULAR VOID BIGGER IN EACH STEP FROM A TO E.

VARIABLE: SIZE OF NEGATIVE CUT.

OBSERVATION: CREATING POSITIVE AND NEGATIVE AREAS BY SHARP-EDGED CUT SEEMS APPROPRIATE.

## EXPERIMENT NO. 2

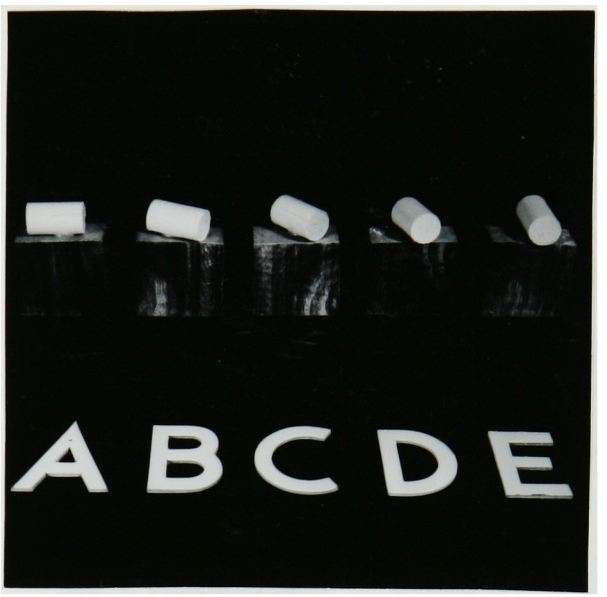



DESCRIPTION: BLOCK OF WOOD WITH CYLINDRICAL METAL FORM SET INTO NOTCH, THE LENGTH OF THE CYLINDER VARYING.

VARIABLE: LENGTH OF CHROME TUBING.

OBSERVATION: COMBINATION OF WOOD AND METAL VISUALLY EXCITING.

## EXPERIMENT NO. 3

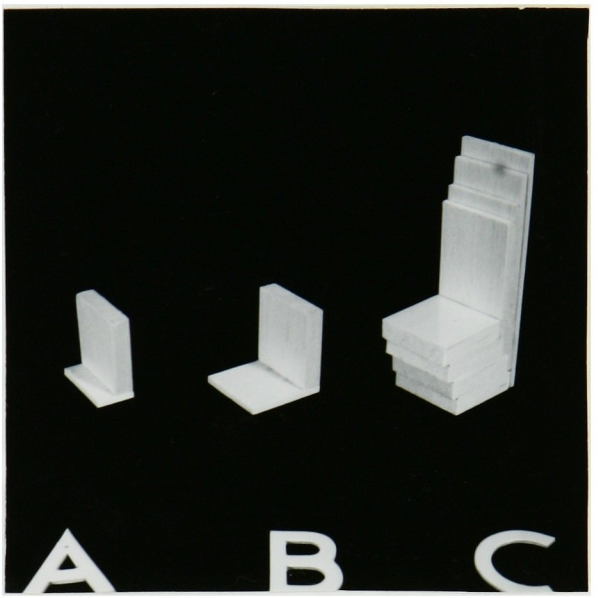



DESCRIPTION: STAINED WOOD BLOCK WITH UNSTAINED WOOD DOWEL PLACED IN DIFFERENT ANGLES TO THE VERTICAL PLANE OF THE BLOCK.

VARIABLE: ANGLE OF DOWEL.

OBSERVATION: CONTRAST OF SQUARE-EDGED FORM TO ROUNDED FORM AND RIGHT ANGLES TO OBLIQUE ANGLES.

## EXPERIMENT NO. 4




DESCRIPTION: THIN BLOCKS OF BALSA WOOD STACKED TOGETHER.

VARIABLE: SIZE AND NUMBER OF UNITS.

OBSERVATION: STACKING INCREASES VISUAL APPEAL AS WELL AS STRENGTH.

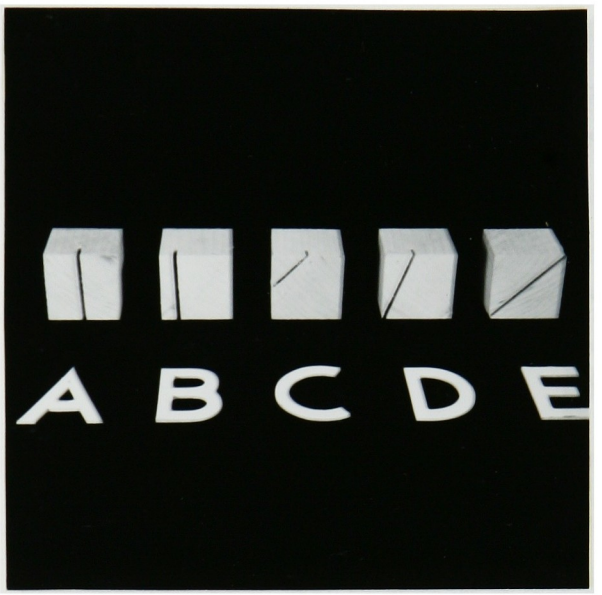
## EXPERIMENT NO. 5


DESCRIPTION: ALUMINUM STRIPS, EACH ROLLED UP TO A GREATER AMOUNT.

VARIABLE: AMOUNT OF ROLL.

OBSERVATION: MODERN MATERIAL MADE PLEASINGLY BAROQUE IN CHARACTER.

## EXPERIMENT NO. 6

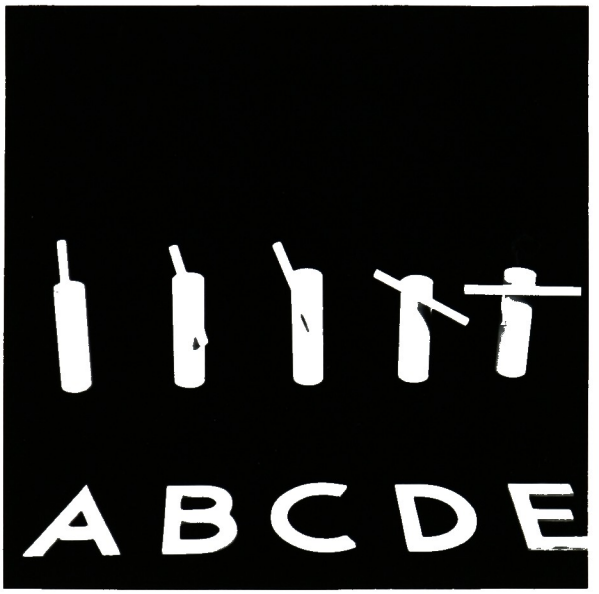



DESCRIPTION: BANDSAW CUTS INTO WOODEN CUBE AT DIFFERENT ANGLES.

VARIABLE: ANGLE OF CUT.

OBSERVATION: LINEAR DESIGN CUT INTO WOOD.

## EXPERIMENT NO. 7

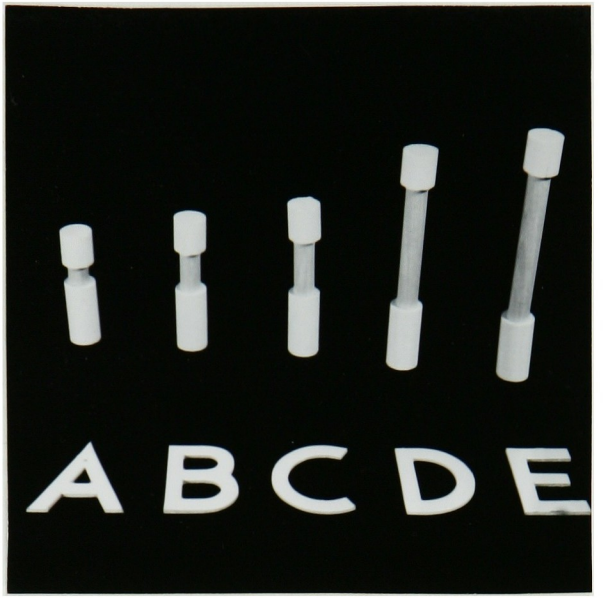



DESCRIPTION: SMALL DOWEL GLUED TO LARGER DOWEL AT DIFFERENT ANGLES.

VARIABLE: POSITION OF SMALL DOWEL.

OBSERVATION: TENUOUS POSITION OF SMALL DOWEL PRODUCES STIMULATING ANXIETY.

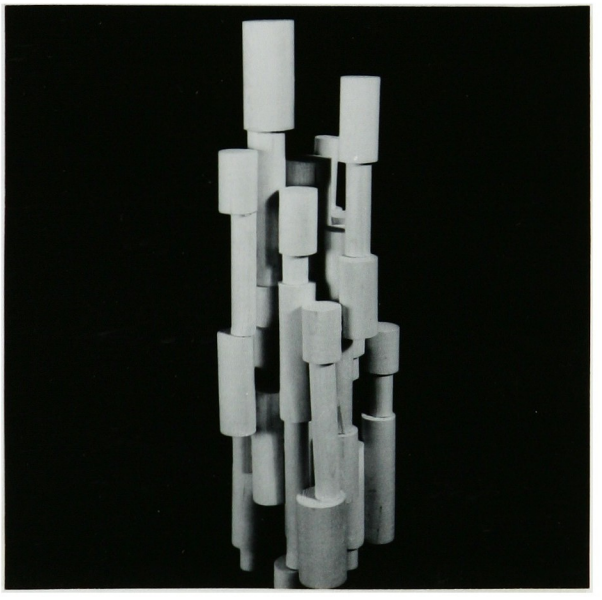
## EXPERIMENT NO. 8




DESCRIPTION: TWO DOWELS CONNECTED BY ONE OF SMALLER DIAMETER.

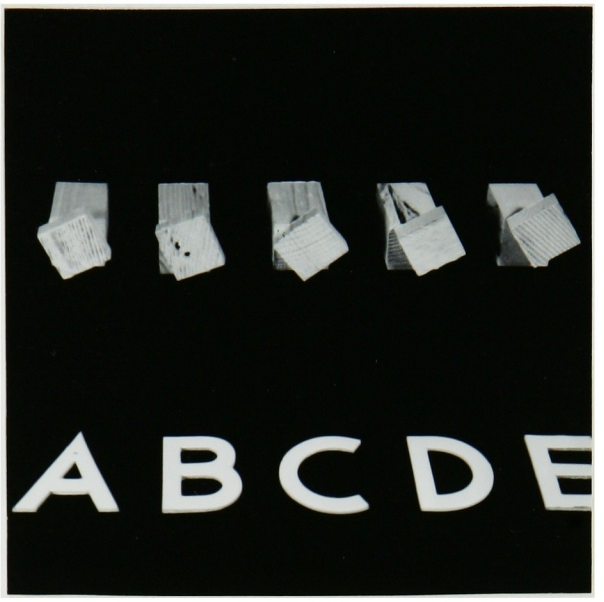
VARIABLE: INCREASING HEIGHT OF CENTER DOWEL.

OBSERVATION: SOLID, ACCEPTABLE, STRONG APPEARANCE.



DEVELOPMENT: SCULPTURE IN THE ROUND PRODUCED BY GROUPING. VARIETY OF HEIGHTS PROVED STIMULATING.

## EXPERIMENT NO. 9



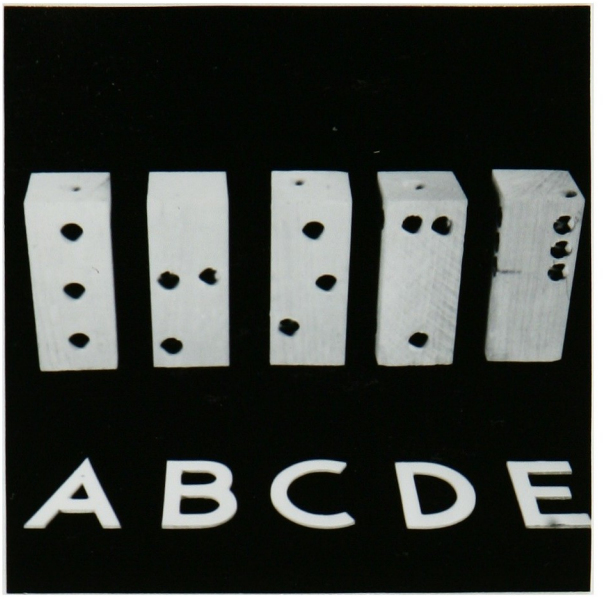

DESCRIPTION: TWO BLOCKS OF WOOD CONNECTED BY DOWEL.

VARIABLE: ANGULAR POSITION OF TOP BLOCK.

OBSERVATION: SIMPLICITY OF FORMS HAS BEAUTY.

DEVELOPMENT: INCREASE IN SIZE AND SIMPLE REALTIONSHIP ADDS MONUMENTALITY TO BLOCKS AND PRODUCES AN ORGANIC WHOLE.

# EXPERIMENT NO. 10



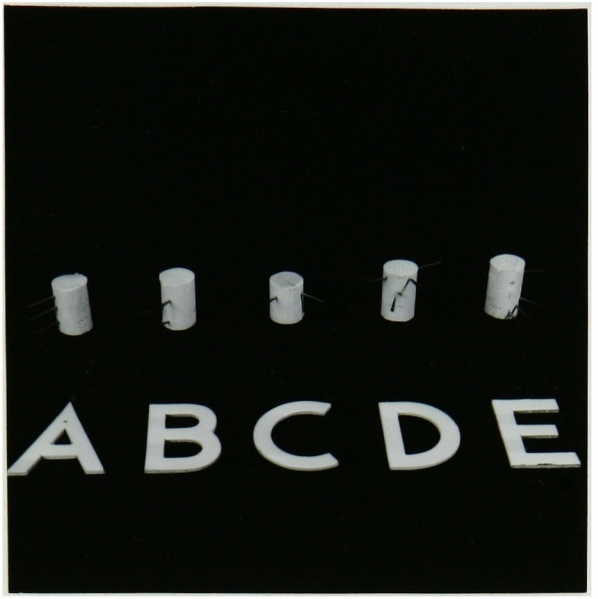

DESCRIPTION: LARGE RECTANGULAR BLOCK OF SOLID WOOD WAS DRILLED WITH 3 HOLES ON SEVERAL SIDES.

VARIABLE: PLACEMENT OF HOLES.

OBSERVATION: PIERCING SEEMS TO LIGHTEN THE APPEARANCE GIVEN BY THE BLOCK ITSELF. THIS PRINCIPLE MIGHT BE APPLIED IN LIGHTENING THE EFFECT OF SOME LARGE MASS THAT YOU MUST WORK WITH. ALSO, THE INVOLVEMENT OF NEGATIVE SPACES IS INTERESTING.

DEVELOPMENT: IDEA DIRECTLY ENLARGED TO BLOCK OF WOOD 5" X 10" X 5".

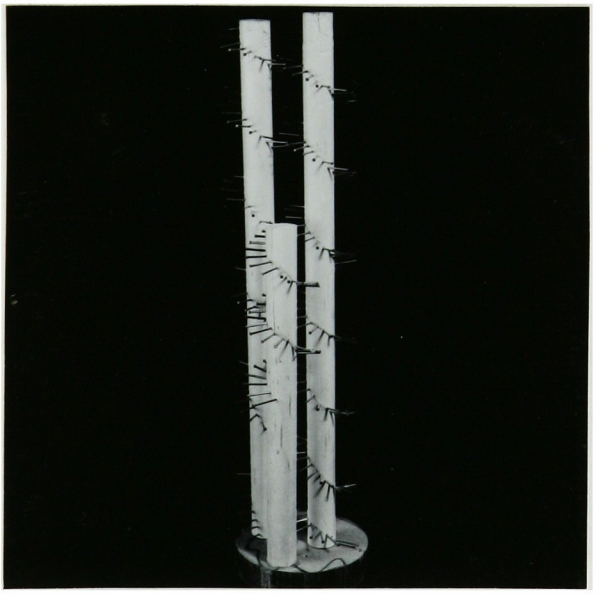
## EXPERIMENT NO. 11




DESCRIPTION: THREE NAILS HAMMERED INTO DOWEL IN DIFFERENT POSITIONS.

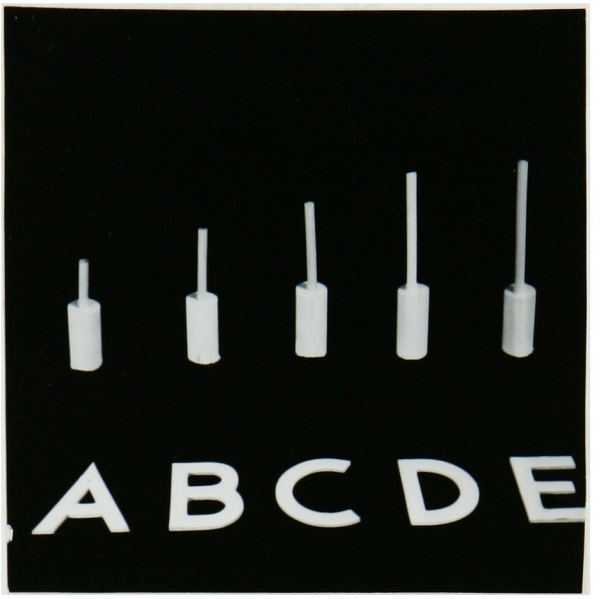
VARIABLE: POSITION OF NAILS.

OBSERVATION: SPINEY LOOK OF RESULT MAY BE WORTH PURSUING.



DEVELOPMENT: ATTEMPT TO PRODUCE SCULPTURE FROM THIS IDEA -- LACEY, CIRCULAR PATTERN OF NAILS IN WOOD.

## EXPERIMENT NO. 12




DESCRIPTION: SINGLE THIN WOOD DOWEL DRILLED INTO LARGER DOWEL.

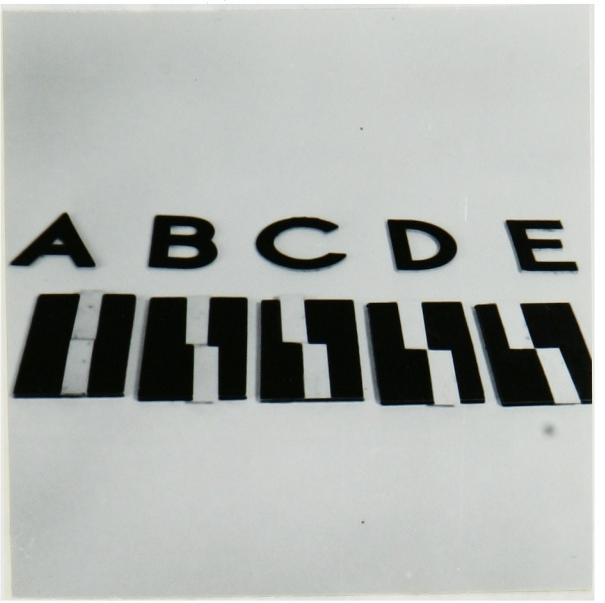
VARIABLE: HEIGHT OF THIN DOWEL.

OBSERVATION: RESULT SEEMS TO LOOK VERY STIFF AND UNINSPIRING.

DEVELOPMENT: A LARGER PIECE USING MULTIPLES OF THIS IDEA PLUS ANGULARITY RATHER THAN VERTICALITY PRODUCED A GOOD PIECE.

## GRADUATE STUDENT EXPERIMENTS

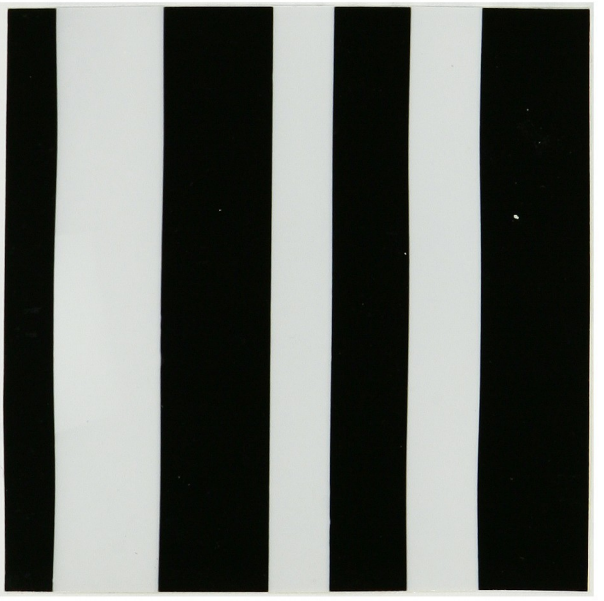
## EXPERIMENT NO. 1



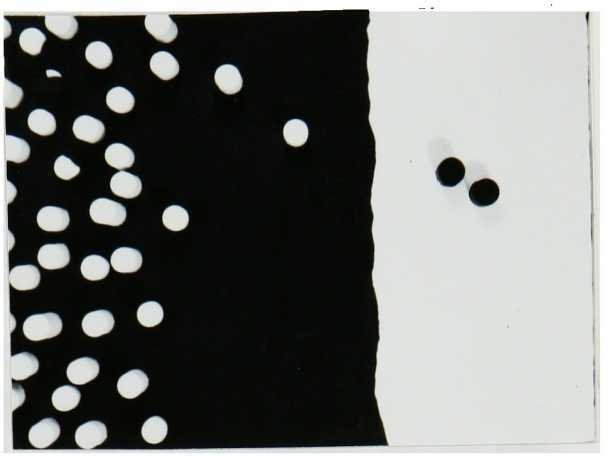

DESCRIPTION: TWO WHITE OPAQUE PLASTIC RECTANGLES ARRANGED ON A BACKGROUND OF BLACK OPAQUE PLASTIC.

VARIABLE: POSITION OF RECTANGLES

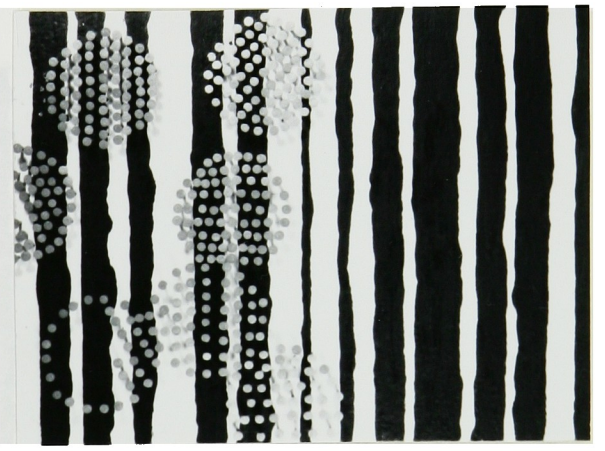
OBSERVATION: FLAT BLACK AND WHITE PATTERN, AS CLEAN-CUT QUALITY OF A MONDRIAN. EMPHASIS ON POSITION.



DEVELOPMENT: LARGE PIECE 20" X 30". GLASSY SURFACE OF PLASTIC EMPHASIZED. ENOUGH VARIETY OF PROPORTIONS TO QUALIFY AS A SUBTLE ARRANGEMENT.



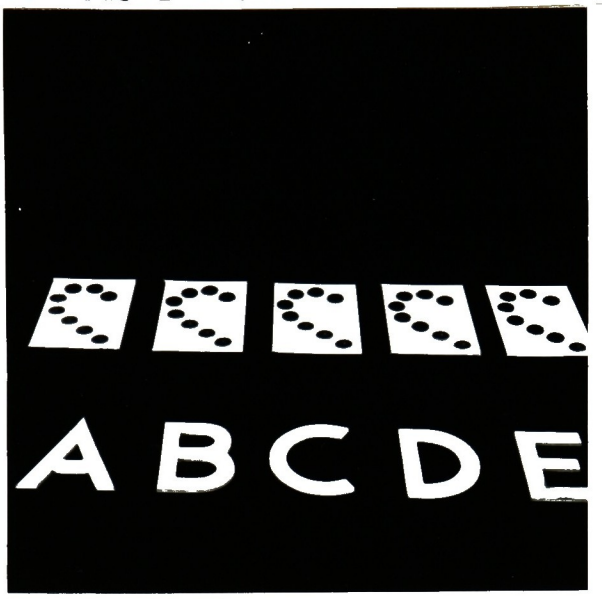
DEVELOPMENT: HOMOSOTE PANEL, 20" X 30", PAINTED BLACK AND WHITE AND INTERCHANGED WITH WHITE AND BLACK. THE APPEAL OF THE POSITIVE AND NEGATIVE RELATIONSHIP ILLUSTRATED.



DEVELOPMENT: HOMOSOTE PANEL, 20" X 30", PAINTED BLACK AND WHITE VERTICAL STRIPES WITH NAILS ARRANGED ON TOP IN CIRCULAR FASHION, PROJECTING ABOUT $\frac{1}{2}$" FROM SURFACE.

## EXPERIMENT NO. 2

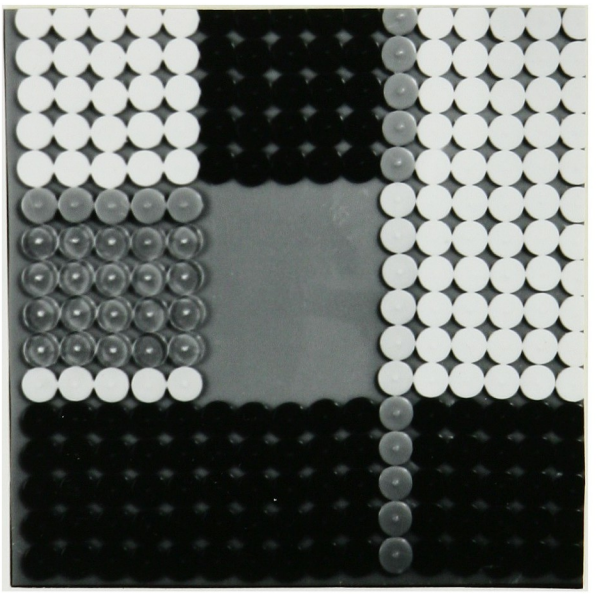
(DONE BY A SOPHOMORE STUDENT IN THE SUMMER PROGRAM.)



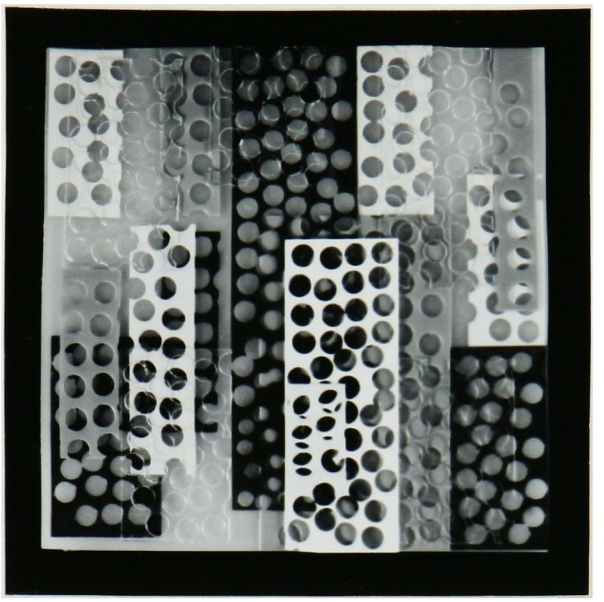

DESCRIPTION: PUNCH-CUT PLASTIC DISCS OF DIFFERENT COLORS ARRANGED ON WHITE PLASTIC BACKGROUND.

VARIABLE: COLORS.

OBSERVATION: ALTHOUGH CURVED DESIGN SEEMED INAPPROPRIATE, BUTTONS THEMSELVES WERE ATTRACTIVE.

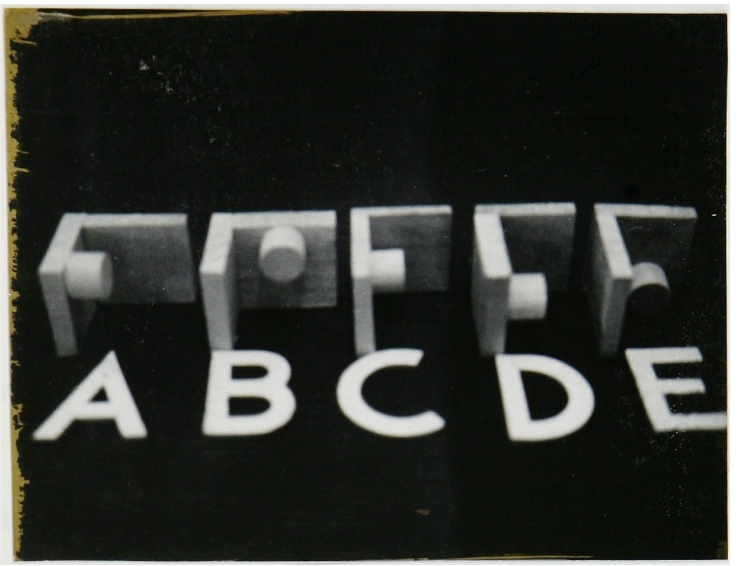


DEVELOPMENT: SMALL 8" X 8" PANEL OF COLORED PLASTIC ARRANGED WITH SLIGHTLY RAISED DISCS OF PLASTIC GROUPED IN MONDRIAN-LIKE COMPOSITION.



DEVELOPMENT: PUNCHED-OUT NEGATIVE REMAINS OF DIFFERENT COLORED PLASTIC SHEETS USED IN OVERLAPPING RECTANGULAR DESIGN. SIZE 10" X 10".

EXPERIMENT NO. 3




DESCRIPTION: SQUARES OF WOOD GLUED AT RIGHT ANGLES AND COMBINED WITH A ROUND DOWEL SHAPE FOR VARIETY.

VARIABLE: POSITION OF DOWEL IN RELATIONSHIP TO CORNER FORMED BY SIDES.

OBSERVATION: LIGHT AND SHADOW PLAY INTERESTING BECAUSE OF BOX EFFECT OF SIDES AND ROUNDNESS OF DOWEL.

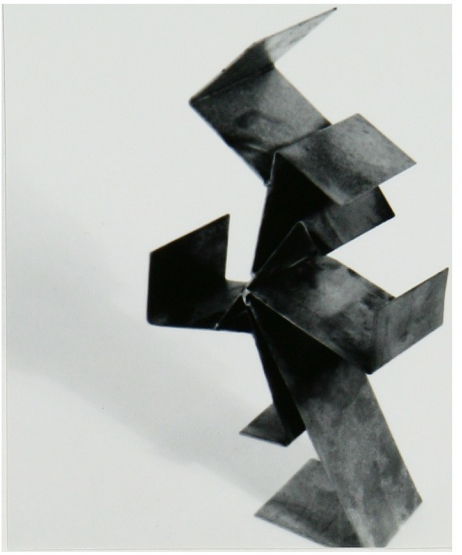
## EXPERIMENT NO. 4


DESCRIPTION: ONE SMALL BLOCK ATTACHED BY A NOTCHING AND GLUING TO LARGER BLOCK AT OBLIQUE ANGLE.

VARIABLE: DEGREE OF OBLIQUE ANGLE.

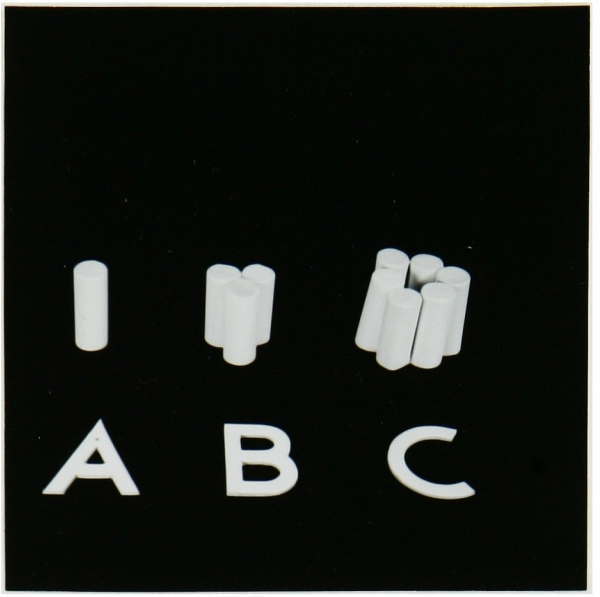
OBSERVATION: SLIGHT CHANGE OF DIRECTION OF MASSES LOOKS KINETIC BUT STILL SOLID.

DEVELOPMENT: PIECES OF WOOD 2" X 4" X 4" NOTCHED AND GLUED, ASSEMBLED TO MAKE LARGER SCULPTURE QUITE KINETIC IN APPEARANCE BECAUSE OF ITS OBLIQUE ANGLES. SIZE, APPROXIMATELY 10" X 12".



DEVELOPMENT: SAME IDEA TRANSLATED INTO BENT AND SOLDERED METAL. SIZE, APPROXIMATELY 8" X 10".

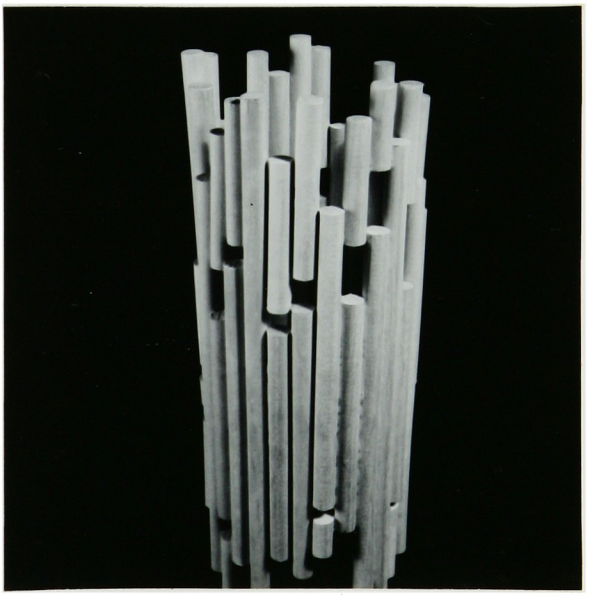
# EXPERIMENT NO. 5




DESCRIPTION: DOWELS GLUED SIDED BY SIDE TO FORM GROUP OF CYLINDERS.

VARIABLE: NUMBER OF DOWELS IN GROUP.

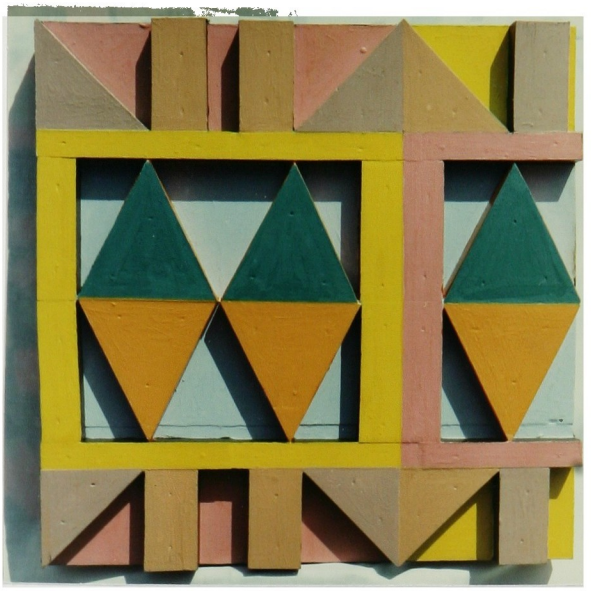
COMMENT: MASSING OF WOODEN FORMS HAS A SOLID, NATURAL APPEARANCE LIKE THE STACKING OF A CORD OF WOOD, THE BUNDLING OF RODS OR STICKS, A STOCKADE FENCE.



DEVELOPMENT: GLUING OF DOWELS OF VARYING LENGTHS AROUND OPEN CYLINDRICAL SPACE PRODUCED BOTH QUALITIES OF SOLIDITY AND OPENNESS.

ALTHOUGH THE TWO PROJECTS ILLUSTRATED PREVIOUSLY WERE DONE BY DIFFERENT STUDENTS, MANY PROJECTS WERE DEVELOPED ALONG SIMILAR LINES, WHICH FACT TENDS TO DEMONSTRATE THAT THE STUDENTS DERIVED STIMULATION AND INSPIRATION FROM THEIR FELLOW STUDENTS' WORK AND OFTEN VERY SIMILAR EXPERIMENTS WERE CARRIED ON AS WELL AS VERY SIMILAR ENLARGEMENTS.

# EXPERIMENT NO. 6

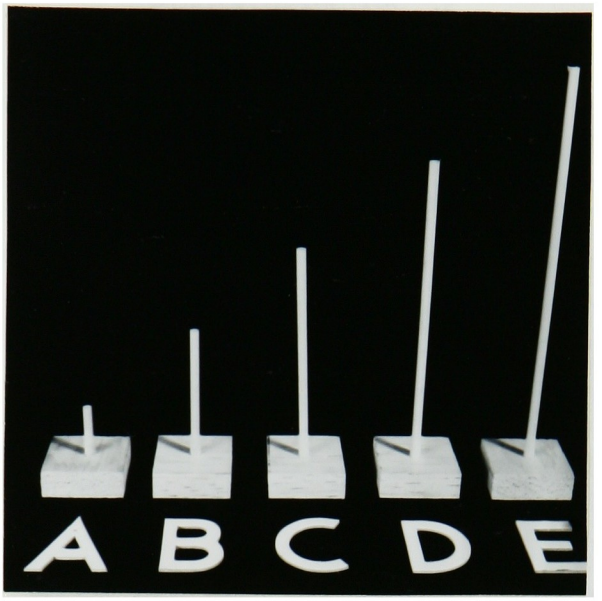


DESCRIPTION: SIX PAINTED 12" X 12" WOOD PANELS FITTED WITH WOOD TRIANGLES AND RECTANGLES IN 1" RELIEF.

VARIABLE: COLOR ARRANGEMENT.

OBSERVATION: SIX PANELS WERE SUITABLE FOR ASSEMBLAGE INTO ONE LARGE RELIEF.

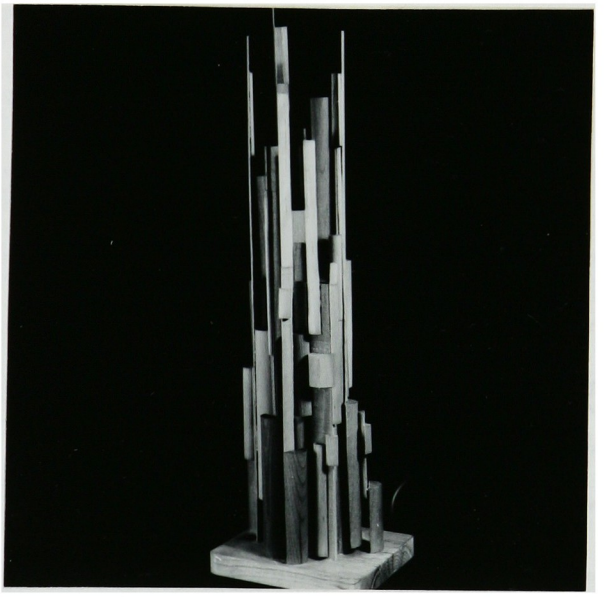
## EXPERIMENT NO. 7




DESCRIPTION: SINGLE THIN WOODEN DOWEL DRILLED AND GLUED INTO WOODEN BASE.

VARIABLE: HEIGHT OF DOWEL.

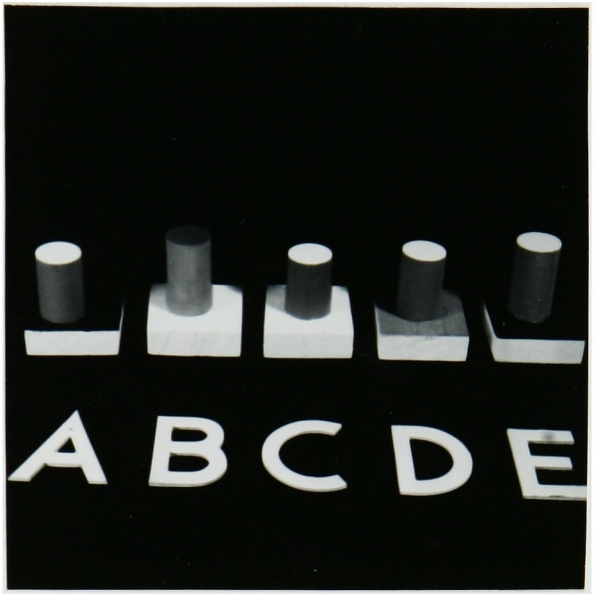
OBSERVATION: HIGH DOWEL TOO THIN IN PROPORTION TO HEIGHT AND THICKNESS OF BASE.



DEVELOPMENT: THE GROUPING OF MANY DOWELS OF DIFFERENT LENGTH AND DIAMETER PRODUCED A SCULPTURE IN THE ROUND.

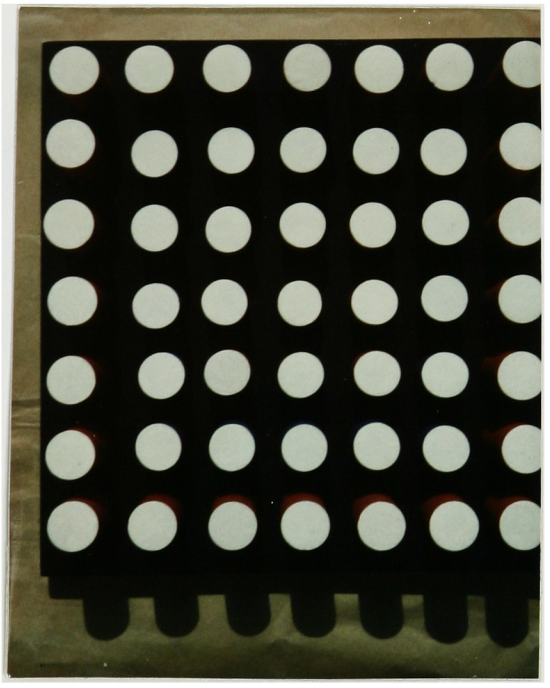
## AUTHOR'S EXPERIMENTS

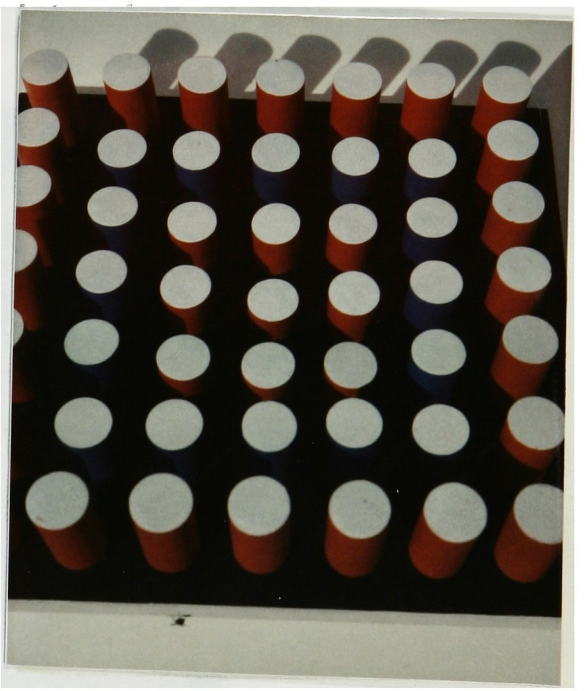
## EXPERIMENT NO. 1




DESCRIPTION: SINGLE DOWEL ARRANGED UPRIGHT ON WOODEN BASE. ALL AREAS PAINTED.

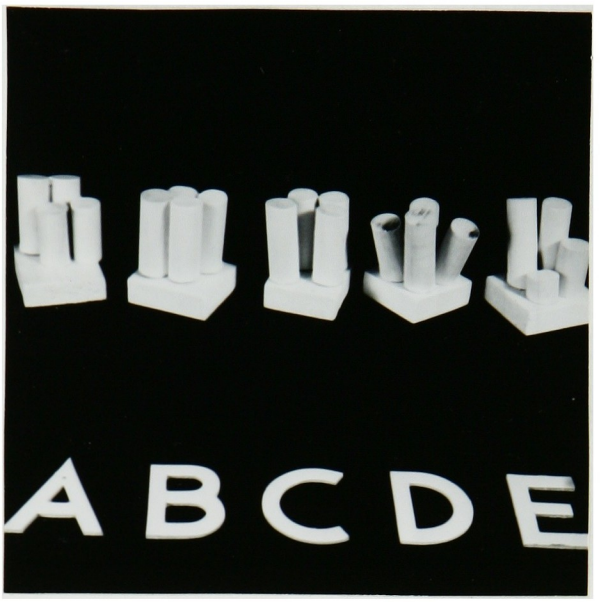
VARIABLE: COLOR ARRANGEMENT OF BASE, SIDE AND TOP.





DEVELOPMENT: ON A 12" SQUARE BOARD, DOWELS ARRANGED EVENLY IN ROWS LIKE THE STARS IN THE AMERICAN FLAG, BUT CUT IN PROGRESSIVELY SHORTER HEIGHTS TOWARD CENTER. THIS PRODUCES A STRAIGHT-ON APPEARANCE OF WHITE DOTS ON BLACK BUT A SIDE APPEARANCE OF RED AND BLUE STRIPES.

# EXPERIMENT NO. 2



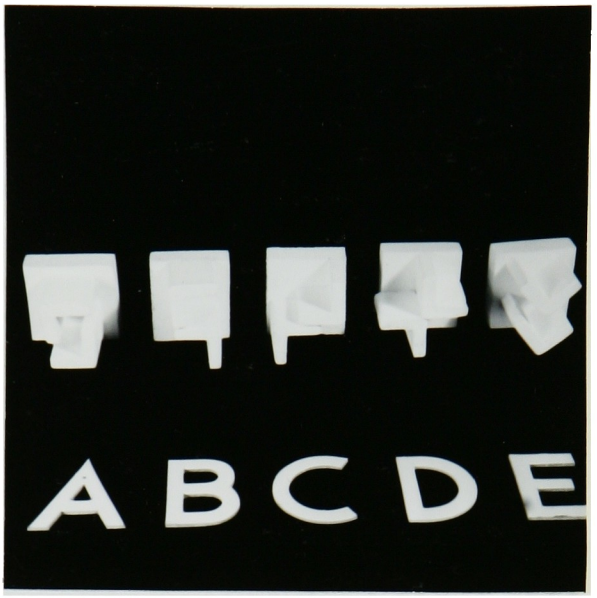

DESCRIPTION: GROUP OF 4 DOWELS PLACED ON EACH OF 5 WOODEN BASES.

VARIABLE: HEIGHT AND ANGLE OF DOWELS.

OBSERVATION: DIRECTIONS OF DOWELS SEEM TO HAVE SOME FORCE WORTH INVESTIGATING.

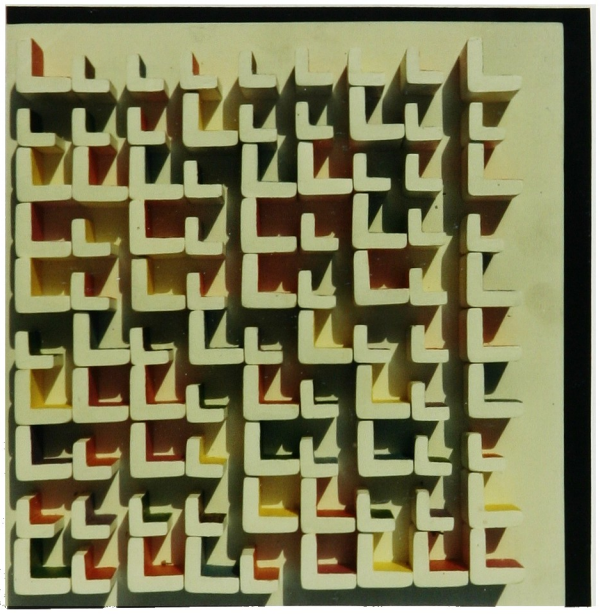
DEVELOPMENT: DOWELS CUT AT EXTREME ANGLES AND GLUED TO 12" X 12" WOOD BASE TO CREATE APPEARANCE OF OBLIQUE MOVEMENT, AS WELL AS TEXTURE.

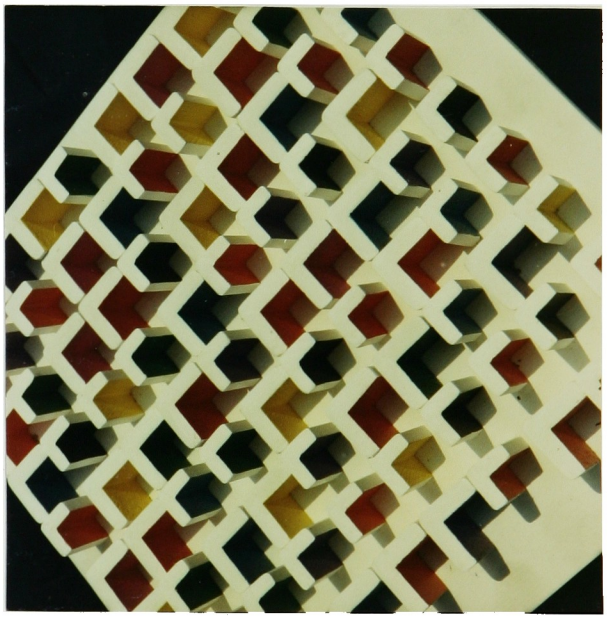
# EXPERIMENT NO. 3




DESCRIPTION: TWO SLICES OF WOOD CORNER-BEAD, STOCK MOLDING ARRANGED ON WOOD BASE, OPEN AND CLOSED FORMS PRODUCED.

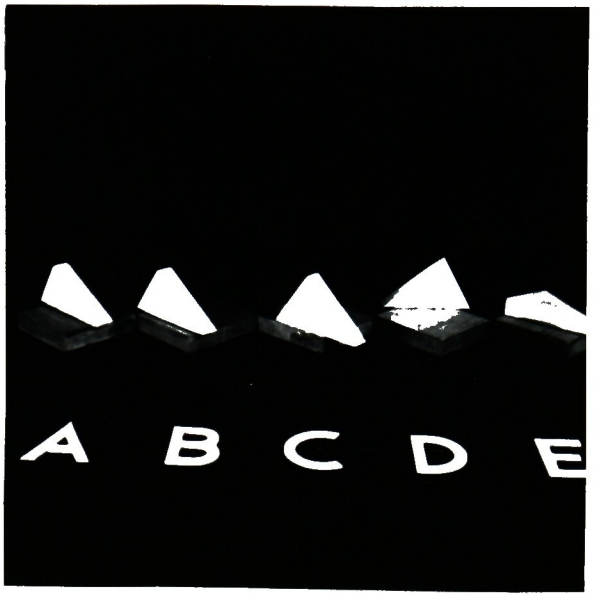
VARIABLE: POSITION AND RELATIONSHIP OF RIGHT ANGLE PIECES.





DEVELOPMENT: ARRANGEMENT ON A 12" X 12" BASE SAME STOCK PIECES OF CORNER BEAD BUT OF TWO DIFFERENT SIZES IN A VERTICAL-HORIZONTAL FASHION SO THAT STRAIGHT-ON EFFECT IS ALL WHITE BUT SIDE APPEARANCE REVEALS BOXES OF COLOR PAINTED INSIDE OF CORNER BEAD.

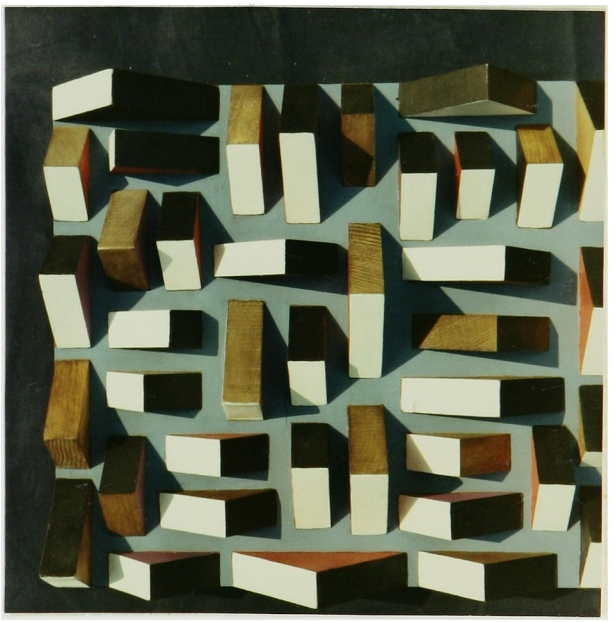
# EXPERIMENT NO. 4




DESCRIPTION: TRIANGLE OF NATURAL WOOD ARRANGED ON BACKGROUND OF STAINED BLOCK.

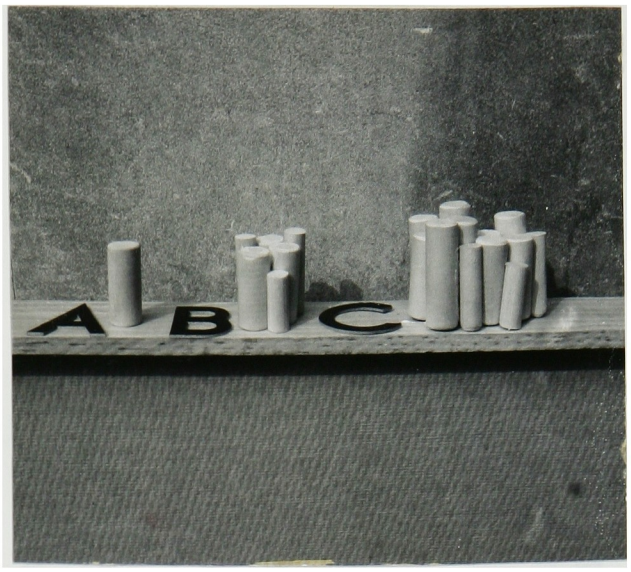
VARIABLE: POSITION OF TRIANGLE.

OBSERVATION: PROJECTION OF APEX OF TRIANGLE MORE THAN CHANGING POSITION WAS INTERESTING FACTOR.



DEVELOPMENT: ON 12" X 12" BOARD PAINTED WOODEN TRIANGLES ARRANGED IN VERTICAL-HORIZONTAL FASHION. MEDIEVAL TEXTURED SURFACE AS WELL AS COLOR TO EMPHASIZE PLANES AND PEAKS.

# EXPERIMENT NO. 5



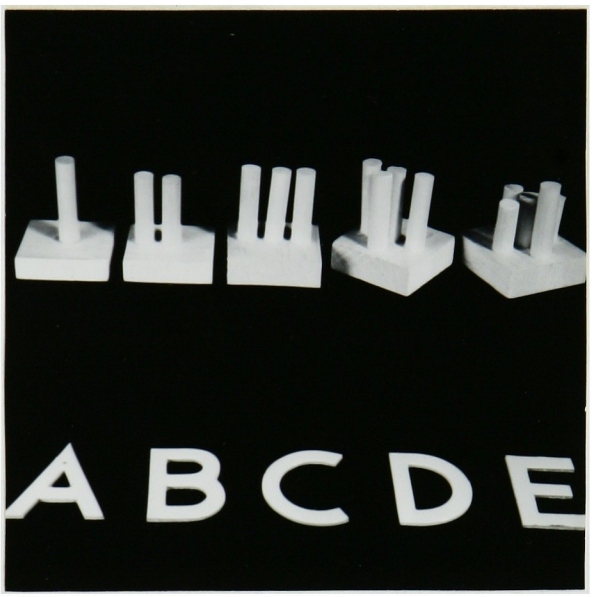

DESCRIPTION: SINGLE DOWEL, THEN TWO GROUPS OF DOWELS, GLUED TOGETHER.

VARIABLE: SIZE AND NUMBER.

OBSERVATION: MULTIPLICITY MAKES FOR STRENGTH AND INTEREST.

DEVELOPMENT: DOWELS OF DIFFERENT HEIGHTS AND DIAMETERS GROUPED TOGETHER UPRIGHT ON WHITE BOARD. TOPS OF DOWELS PAINTED MANY COLORS. SOME AT OBLIQUE ANGLES TO SURFACE.

## EXPERIMENT NO. 6

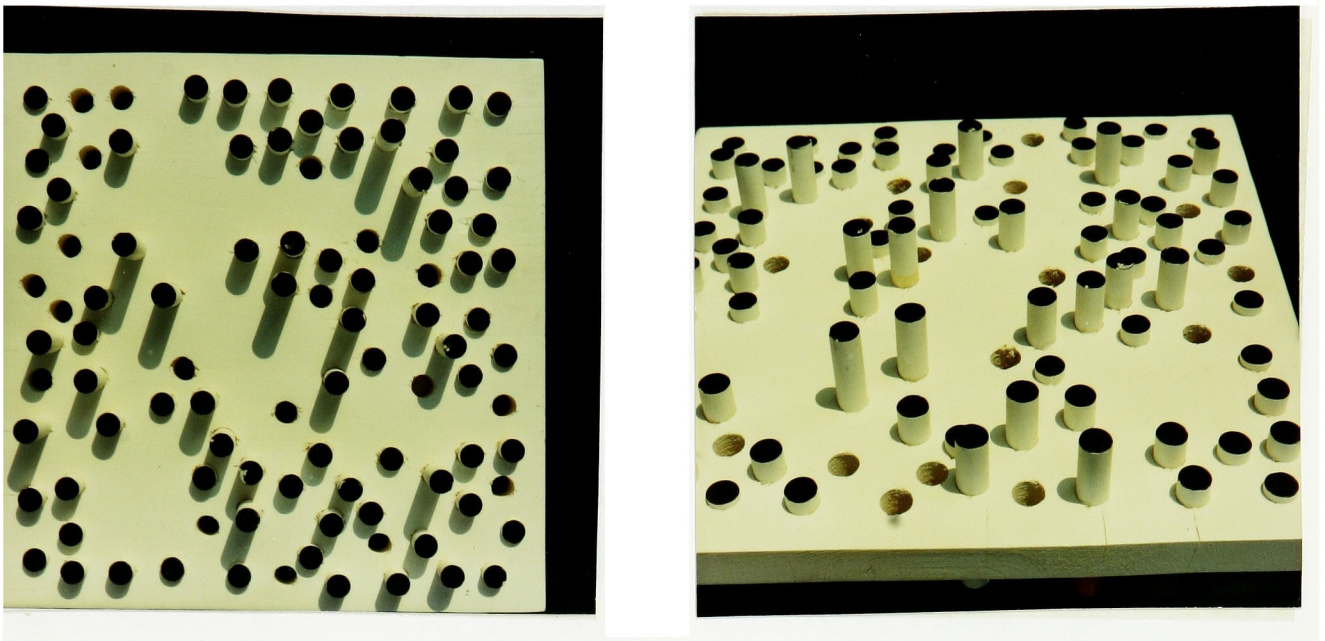



DESCRIPTION: SMALL DOWEL INCREASED IN NUMBER IN EACH OF FIVE BASES.

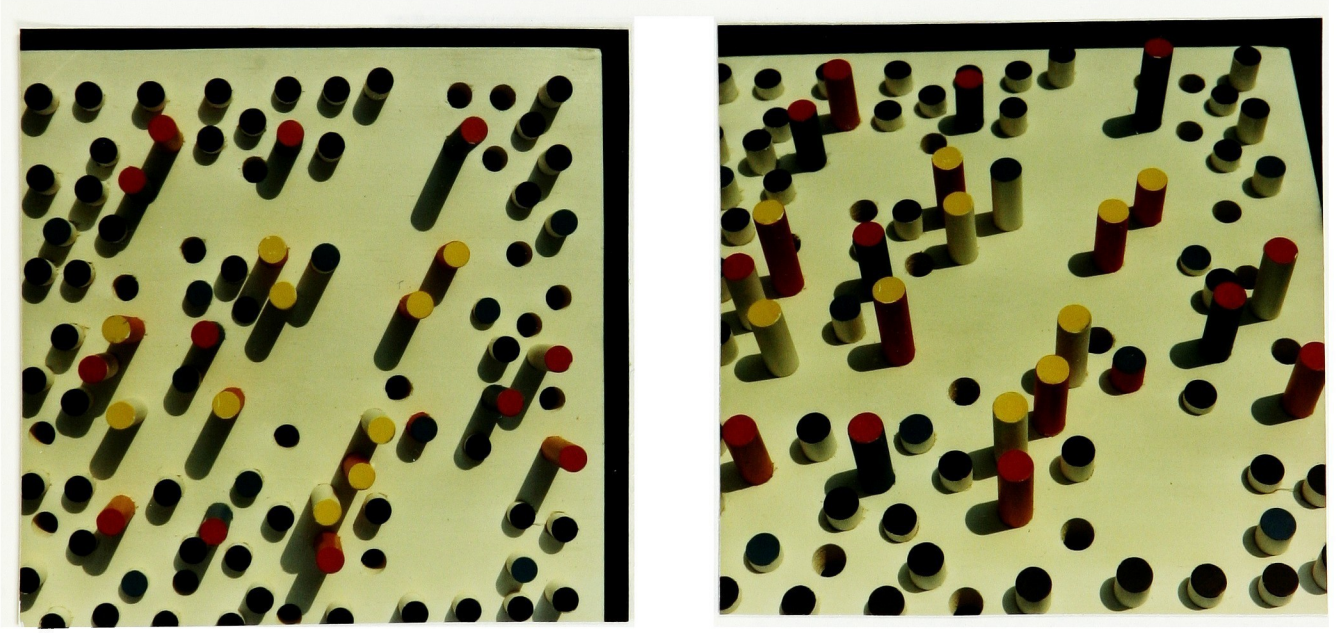
VARIABLE: WOOD.

OBSERVATION: GROUPING OF DOWELS SEEMS TO HAVE SOME POSSIBILITY.

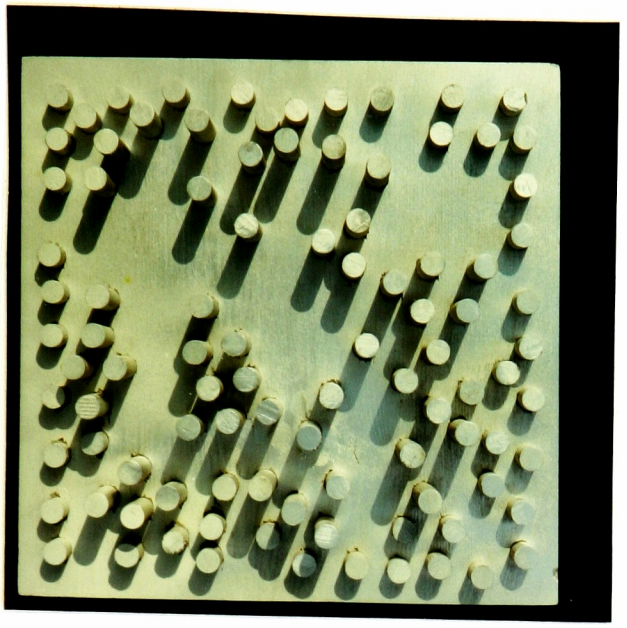
DEVELOPMENT: THE FOLLOWING SIX EXPERIMENTS ARE ENLARGEMENTS OF THE SAME IDEA AS ABOVE. THE SIX PINE BOARDS, 12" X 12", WERE DRILLED SIMULTANEOUSLY AND DOWELS WERE SET INTO EACH IN DIFFERENT PATTERNS AND SUBSEQUENTLY PAINTED IN DIFFERENT SCHEMES.

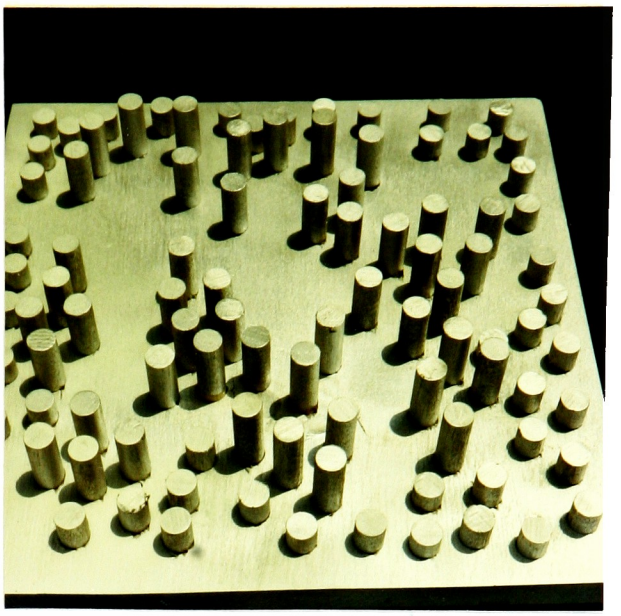


(A) BLACK AND WHITE ILLUSION OF POSITIVE AND NEGATIVE CONFUSED BY DARK DRILLED HOLES AND PROJECTING BLACK TIPS ON DOWELS.

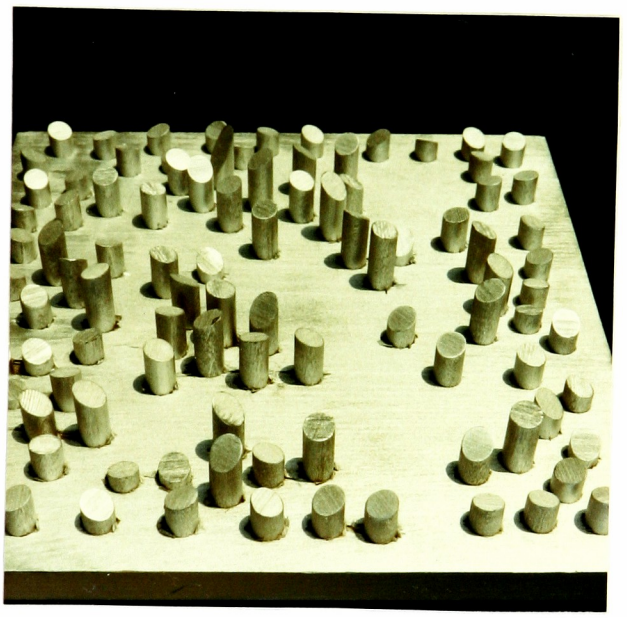


(B) MULTICOLORED PROJECTING DOWELS COMBINED WITH BLACK APPEARANCE OF DRILLED HOLES, AS WELL AS LOW PROJECTIONS TIPPED IN BLACK.

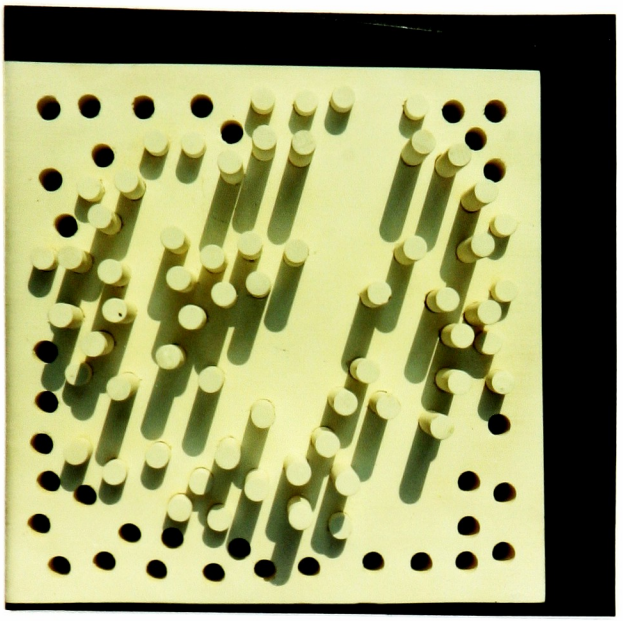


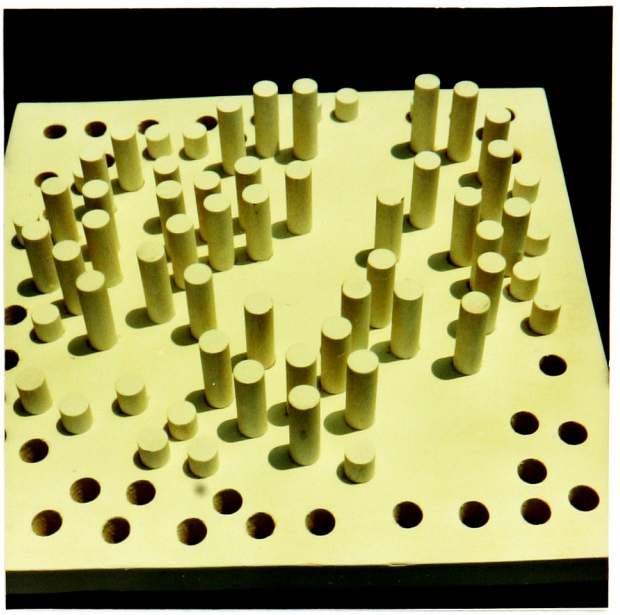


(C) ALL ALUMINUM SPRAY ON PROJECTING DOWELS OF DIFFERENT HEIGHTS.

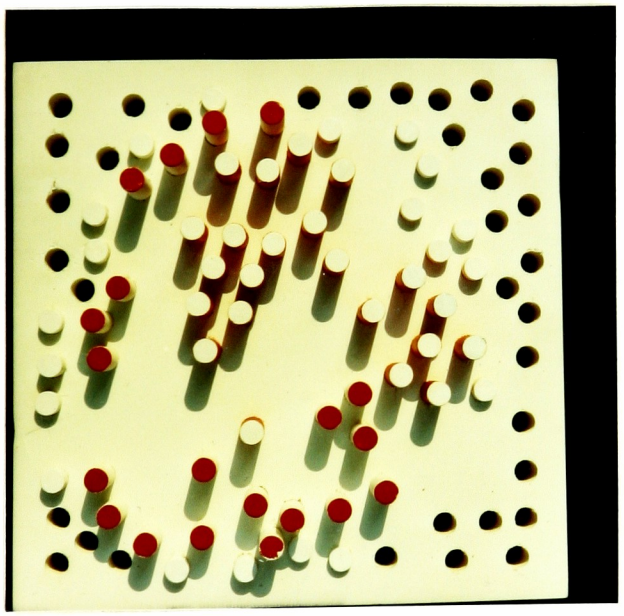


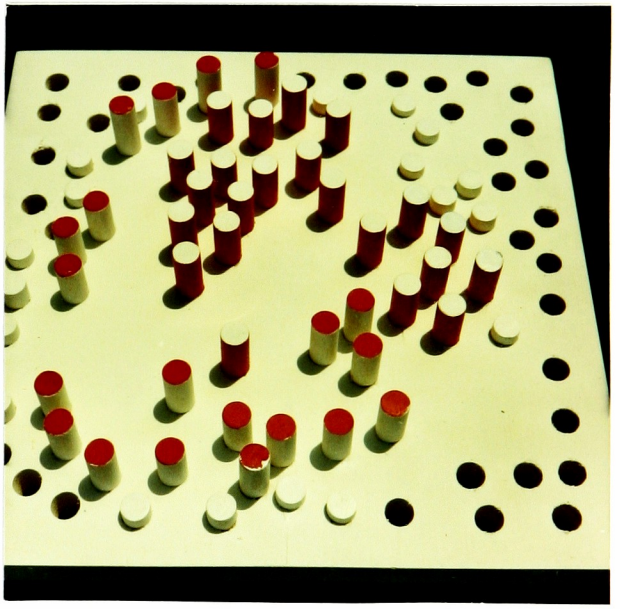
(D) ALL ALUMINUM SPRAY ON PROJECTING DOWELS OF DIFFERENT HEIGHTS AND ANGULAR FACES.



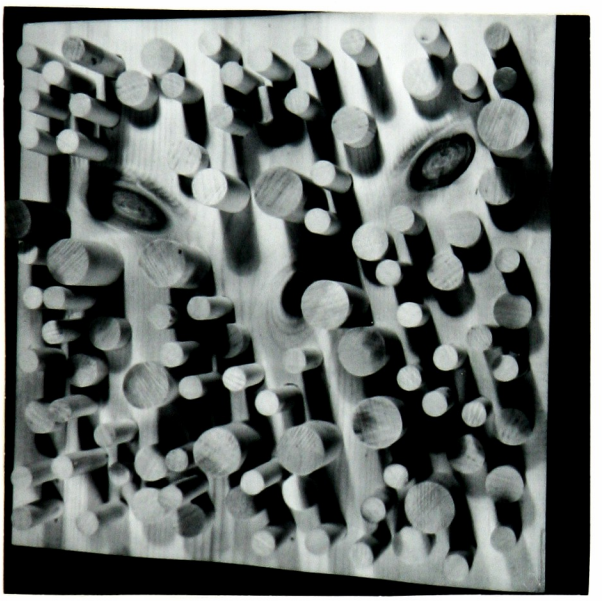


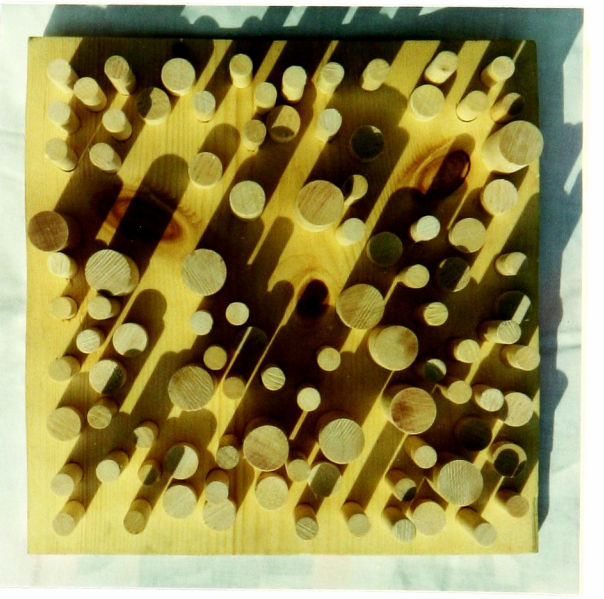
(E) ALL WHITE SPRAY ON DOWELS SET AT TWO HEIGHTS ONLY, ONE HIGH, ONE LOW, IN CIRCULAR GROUPING, WITH UNFILLED DRILLED HOLES MAKING UP OUTER RING.



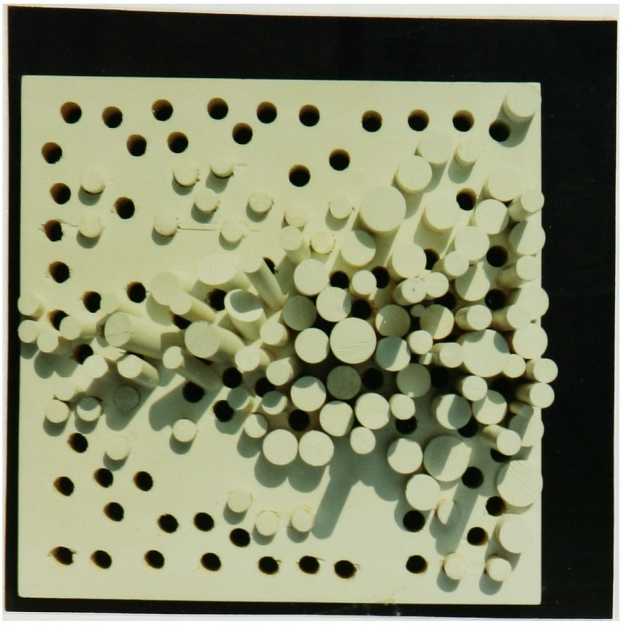


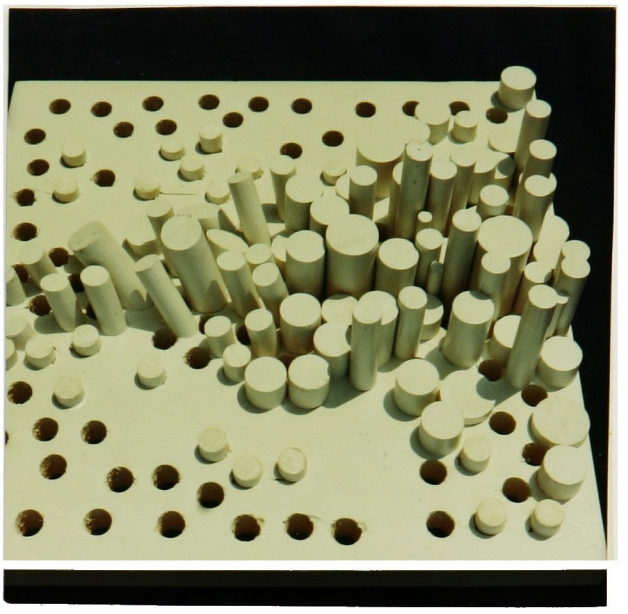
(F) SAME ARRANGEMENT AS "E" EXCEPT FOR ADDITION OF RED PAINT ON SIDES OF TALL DOWELS AND TIP OF SHORT ONES.



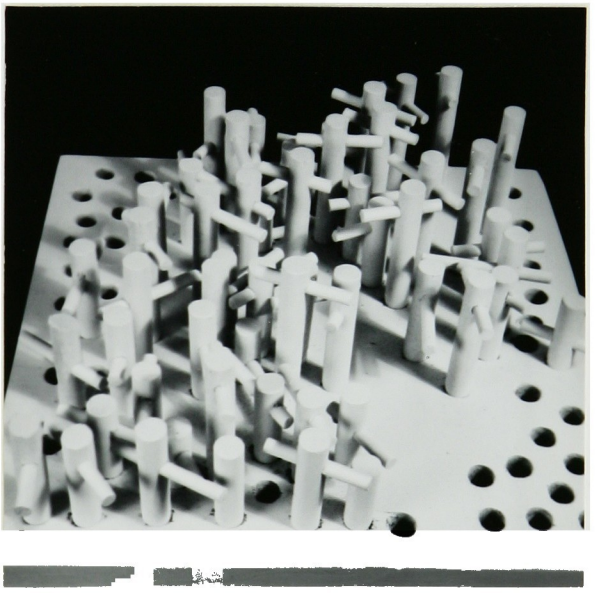


(G) NATURAL COLORED DOWELS INSERTED IN DRILLED HOLES AND DOWELS OF LARGER DIAMETER ADDED FOR VARIETY. KNOT HOLES OF WOOD BASE USED IN ARRANGEMENT OF PATTERN.



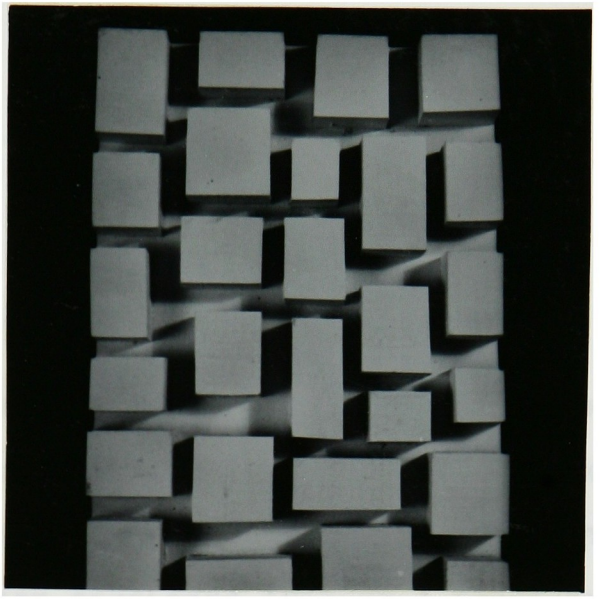


(H) DOWELS OF VARIOUS DIAMETERS AND HEIGHTS BOTH GLUED ON AND DRILLED INTO HOLES OF BOARD. ALL SURFACES PAINTED WHITE FOR UNITY.

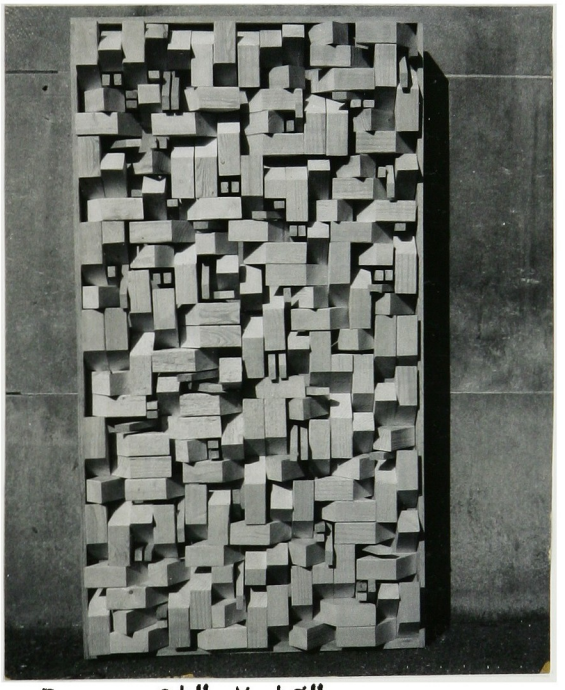


(I) DOWELS DRILLED INTO SOME HOLES AND PIERCED BY SMALLER DOWELS FOR A MORE SPINEY, CONGESTED LOOK.

# EXPERIMENT NO. 7



DESCRIPTION: SMALL 8" X 12" WOOD PANEL ON WHICH SMALLER WOOD RECTANGLES WERE PLACED. SIMPLICITY OF RELIEF WAS ACHIEVED BUT THIS BECAME ONLY THE PRELIMINARY TO A LARGER WOOD PANEL DESCRIBED BELOW.



DESCRIPTION: PANEL 24" X 48" COVERED WITH RELIEF OF LARGE AND SMALL BLOCKS IN ORDERLY PATTERN. VARIETY OF SIZE AND ADDITION OF OBLIQUE EDGE GAVE RICHER SHADOW PLAY.

# SUMMARY

After observing and participating in the one-variable systematic approach to experimenting in 3-Dimensional design the author can report that the experiments were developed through a programming process which made the configurations seem to be automatically generated. The student, however, while not developing his creative abilities freely and without restrictions, was still responsible for the choice of material and method and had constant recourse either to redesign his element or to reframe his system of development in order to resolve his structures according to his own aesthetic taste.

While such a system of experimentation seemed sometimes narrow and confining, this study did give insight into the fundamental nature of all structure, which is essentially element plus operation.

A REVOLUTION IS TAKING PLACE IN THE ARTISTS RELATION TO NATURE. HE NOW ABSTRACTS FROM ITS CREATIVE PROCESS, NOT ITS CREATIONS.

TO CREATE A WORK OF ART REQUIRES THE PROPER ORDERING OF KNOWLEDGE, BUT THE LAYMAN THINKS THE ARTIST HAS TAKEN ANY MATERIAL, ACTUALIZED INTO ANY FORMS AND COLORS AND STRUCTURED THEM IN ANY WAY HE WISHES.[6]

[6]CHARLES BIEDERMAN, "SPHERE AND CUBE", STRUCTURE, SIXTH SERIES, NUMBER 1, 1964.

THE ARTIST LIMITS HIMSELF BY THE MEANS WITH WHICH HE WORKS; THE CHOICE OF MEANS IS PART OF HIS SUBJECTIVE NATURE. THE NORM, THE POWERFUL MONOTONY, BECOMES AN EPISODE OR A FIELD WHICH HE DEVELOPS, CHANGES OR INTERRUPTS THROUGH THE USE OF SLIGHT DEVIATIONS OR DIRECT OPPOSITIONS.[7]

THE STUDY OF RATIONAL DESIGN IN TERMS OF TECHNICS AND MATERIALS SHOULD BE ONLY THE FIRST STEP IN THE DEVELOPMENT OF A NEW AND MODERN SENSE OF BEAUTY.[8]

[7]KENNETH MARTIN, "CONSTRUCTION FROM WITHIN", STRUCTURE, SIXTH SERIES, NUMBER 1, 1964. AMSTERDAM.

[8]HERBERT BAYER, WALTER GROPIUS, ISE GROPIUS, (ED.), BAUHAUS, CHARLES T. BRANFORD COMPANY, BOSTON; 1962, IN THE PREFACE BY ALFRED BARR.

## CONCLUSIONS AND RECOMMENDATIONS

THE FOLLOWING CONCLUSIONS AND RECOMMENDATIONS WERE BASED ON THE INVESTIGATION OF THE STUDENTS' WORK PREVIOUSLY DESCRIBED IN THIS THESIS AND ON THE WRITER'S OWN EXPERIMENTATION AND OPINIONS.

FOR THE BEGINNING STUDENT THE ONE VARIABLE METHOD PRIVIDED:

(POSITIVE)

1. A GENUINE FAMILIARIZATION WITH MANY MATERIALS, TOOLS AND PROCESSES IF AN HONEST ATTEMPT WAS MADE ON THE PART OF THE STUDENT TO PARTICIPATE IN THE METHOD.

2. A GENUINE FEELING FOR THE SOLID AND TACTILE FORM OF MATERIALS THROUGH ACTUAL STRUCTURING RATHER THAN SKETCHING IDEAS ON PAPER.

3. A VISUAL COMPARISON OF THE GROWTH OF AN IDEA THROUGH REPEATING DESIGN 5 OR 6 TIMES WITH VARIATION.

4. A CHANCE TO ORIENT HIMSELF TO THE REAL NATURE OF 3-DIMENSIONAL DESIGN, WITH ITS EMPHASIS ON FORM AND SURFACE AND STRUCTURE RATHER THAN THE EMPHASIS OF A SHOP COURSE WHERE ACTUAL OBJECTS SUCH AS BOOKENDS, LAMPS, ETC., ARE PRODUCED.

5. A VALID CONTROL BY THE TEACHER OVER WHAT STUDENT DOES, BOTH IN THE DIRECTION OF HIS EXPERIMENTS AND THE LIMITATIONS.

6. THE CHANCE FOR A GOOD JOB OF EXPLAINING THE VALIDITY AND SOUNDNESS OF THE SCIENTIFIC, EXPERIMENTAL METHOD AS OPPOSED TO THE "FREE PLAY" METHOD MOST STUDENTS HAVE HAD IN HIGH SCHOOL.

7. A DEFINITE GOAL FOR THE STUDENT THUS ELIMINATING THE INSECURITY CONNECTED WITH CREATIVITY.

8. The development of a good habit for the student in making constant judgment of his work.

9. The building of awareness of size, placement, proportion, surface, color, etc., and the measuring of those elements.

10. A controlled learning situation but with enough freedom provided through the selection of materials and experiments.

11. A time limit for experimentation.

12. The courage to discard rather than treasure experiments.

13. Less waste of art material because experiments were small.

(Negative)

1. Too small a format (most forms in the experiments had a large dimension of no more than 3").

2. Too many repeats (5 or 6 duplications with one variable became monotonous).

3. A false measure of success for students who might be skillful at performing the six duplications but who might otherwise be unimaginative.

<u>For the Advanced Student</u> the one-variable method provided:

(Positive)

1. A chance to explore new tools and materials in a quick manner.

2. A systematic approach to developing an idea.

3. The practice of 3-dimensional sketching along with 2-dimensional sketches, thus keeping the advanced student more in touch with the tactile nature of the materials.

4. The method by which an advanced student could still "fool around with materials" instead of jumping to a paper-conceived design from his own pre-conceived design which normally eliminates the possibility of the tools and materials suggesting a creative solution natural to their character.

5. A chance to observe structure scientifically, rather than superficially.

6. An opportunity to sharpen further the mechanical skills of the experienced artist.

(Negative)

1. An over-simplified approach to creativity.

2. Too monotonous a procedure when only one variable was allowed.

3. Too monotonous a procedure when 5 or 6 repetitions were called for. (2 or 3 variables on 3 or 4 repetitions would be less limiting and would provide greater stimulation for refinements and development of an idea.)

4. Not enough size or contrasts to precipitate the formation of an idea.

THERE IS ORDER WITHIN WHICH THERE IS SCOPE RATHER THAN STEREOTYPE. TRUE ORGANIC ORDER, AS WE KNOW IT, SET ONLY THE GENERAL FRAME AND PATTERN, LEAVING THE PRECISE WAYS OF EXECUTION ADJUSTABLE AND INDETERMINATE, FREE TO ADAPT ITSELF TO THE EXIGENCIES OF A WORLD WHOSE DETAILS ARE THEMSELVES UNPREDICTABLE.[9]

9KENNETH MARTIN, "CONSTRUCTION FROM WITHIN", STRUCTURE, SIXTH SERIES, NUMBER 1, 1964.

....But it is precisely the aim of design education to impart to the student the means of achieving authority and command in order to gain ascendancy over the accidental.[10]

[10]Martin Krampen (ed.), Design and Planning, New York; Hastings House, 1965. P. 44.

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## PERIODICALS


STRUCTURE, SIXTH SERIES, NUMBER 1, 1964

ART NEWS, VOL 64. JAN. 1966.

# APPENDIX

The following questionnaire was given to Summer Session students about the fifth week of the six-week course. No names were requested but the level and major of each student was noted on the questionnaire:

STUDENT:

BACKGROUND: UNDERGRADUATE
✓ GRADUATE
MAJOR

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? Definitely.

2. DID ~~THE~~ YOU LIKE THE EXPERIMENTAL METHOD? I did not understand the intention of his approach, regretted that he stressed quantity and said that "quality" was unimportant. I did learn to use the
3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? It gave me an idea of what he is looking for. I tend to find my projects monotonous which have followed a pattern or plan too closely and prefer to work without a
4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING? Both have things to be said for them.

5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS?

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD? I would have to give this more thought than I have time to now.
7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT? I would not have known where to start or have had the vaguest idea as to what was expected of me.
8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS? Yes.

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC. Yes - in a limited way

10. DID YOU HAVE TOO LITTLE OR TOO MUCH TIME? One can always use more time!

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME? Mildly confused.

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU? No.

STUDENT:

BACKGROUND: UNDERGRADUATE
GRADUATE
BASIC GRAPHICS

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? YES. I LEARNED HOW TO USE A FEW NEW MACHINES THAT I DID NOT KNOW BEFORE.

2. DID YOU LIKE THE EXPERIMENTAL METHOD? I THINK IT CAUSES A LOSS FOR SEEING INTO THE FUTURE PROBLEM.

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? IN A WAY BUT IT CAUSES MORE TIME EXPERIMENTING IN A MORE LOGICAL MANNER AHEAD

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING? IN A WAY IT SAVES YOU WORKING RIGHT INTO THE MODELING

5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS? IT SLOWED IT UP WITH RESPECT. I WAS MORE IMPOSSIBLE MODELS IN LESS TIME WITHOUT THINKING

6. IF YOU WERE TO TEACH A CLASS IN 3D DESIGN WOULD YOU EMPLOY THIS METHOD? I MIGHT TRY IT WITH A FEW MORE VIEWS INCLUDED

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT? NO.

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS? YES, I THINK BY WATCHING, YOU SAW SOME DIFFERENT VIEWS OR IDEAS OF OTHERS DESIGNS.

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC.? REGARDLESS OF ANY DESIGN PROJECT YOU WORK ON, MORE OR MORE PROPORTION AND USE FACTORS. HAND FE

10. DID YOU HAVE TOO LITTLE TIME OR TOO MUCH TIME? ADEQUATE TIME

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME? I THINK IT IS A GOOD WAY BUT PROJECT AND CAN BE LOWERED OUT OF TIME TO SET UP MORE

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU? I THINK SOME OF THE EXPERIMENTS WOULD OUT WELL & SHOULD BE KEPT

SEX ___ IT:

BACKGROUND: UNDERGRADUATE
GRADUATE ✓
MAJOR Industrial Arts

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? No

2. DID YOU LIKE THE EXPERIMENTAL METHOD?
Yes

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU?
Somewhat

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING?
Yes

5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS?
could determine

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD?
believe I would employ sketching to begin with

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT?
NO

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS?
Some

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC.?
Some

10. DID YOU HAVE TOO LITTLE TIME OR TOO MUCH TIME?
about right

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME?
O.K.!

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU?
No. since time invested in each was minimal

STUDENT:

BACKGROUND: UNDERGRADUATE
GRADUATE ✓
MAJOR INDUSTRIAL ARTS TEACHING

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D?
No

2. DID YOU LIKE THE EXPERIMENTAL METHOD?
Yes

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU?
YES

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING?
YES

5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS?
BOTH AT TIME

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD?
MODIFIED SOMEWHAT, USE SOME SKETCHING, & EMPLOY MORE TECHNIQUE ON MACHINES

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT?
DEPENDS ON PROJECT, TIME INVOLVED, ETC.

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS?
YES

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC.?
YES

10. DID YOU HAVE TOO LITTLE TIME OR TOO MUCH TIME?
AVERAGE

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME?
GOOD

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU?
YES & NO; IN SOME CASES ITS GOOD AND IT DOESN'T REQUIRE SPENDING.

STUDENT:

BACKGROUND: UNDERGRADUATE ✓
GRADUATE
MAJOR Commercial Art

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? yes

2. DID YOU LIKE THE EXPERIMENTAL METHOD? (no?) but I think it made me open my eyes

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? yes

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING? yes, you can see what you can't see in two-dimensional

5. DID IT (SPEED UP) OR SLOW DOWN YOUR AESTHETIC DECISIONS?

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD? I would have to try others before a decision

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT? yes!!

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS? some

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC.? no

10. DID YOU HAVE TOO LITTLE TIME OR TOO MUCH TIME? enough

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME?
not enough freedom

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU?
yes,

STUDENT: N

BACKGROUND: UNDERGRADUATE
X GRADUATE
MAJOR

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? yes

2. DID THE LIKE THE EXPERIMENTAL METHOD? yes

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? yes

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING? yes

5. D.D IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS?

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLY THIS METHOD? yes

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT? yes

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS? yes

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC. yes

10. DID YOU HAVE TOO LITTLE OR TOO MUCH TIME?

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME?
good - think it is valid

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU? NO

STUDENT:

BACKGROUND: UNDERGRADUATE
GRADUATE
MAJOR FURNITURE - WOOD WORKING

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? NO!

2. DID THE LIKE THE EXPERIMENTAL METHOD? YES. BUT, THE CONCEPT SHOULD BE MORE FULLY EXPLAINED. THE DEVELOPMENT OF ORDER AND VARIATION IS IMPORTANT

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? NO. BUT IT WILL AT A LATER DATE. I MUST HAVE TIME TO FULLY UNDERSTAND THE DIRECTION.

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING? IN SOME (BUT NOT ALL) PROBLEMS.

5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS? SPEED UP. TO TAKE TIME TO DECIDE REMOVES THE SPONTANEITY OF WORK

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD? AT FIRST YES BUT IT IS GOOD DISCIPLINE TO THE ~~EYE~~ HAND EYE RELATIONSHIP

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT? AT WHAT STAGE? AS A GRADUATE - YES.

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS? YES, OTHERS WORK CAN NOT HELP BUT INFLUENCE

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC. NOT MUCH.

10. DID YOU HAVE TOO LITTLE OR TOO MUCH TIME? ENOUGH.

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME? IT IS GOOD AT EARLY EDUCATION BUT IT IS NOT SO IMPORTANT AT THIS LATE DATE.

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU? NO. I DO NOT THINK THEY SHOULD BE CONSIDERED AS A SENTIMENTAL PIECE.

STUDENT:

BACKGROUND: UNDERGRADUATE
GRADUATE ✓
MAJOR *PAINTING*

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? *yes - welding*

2. DID THE LIKE THE EXPERIMENTAL METHOD?
*yes, I have used a similar method before as a student*

3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? *yes*

4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING?
*yes*

5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS?
*helped to speed it up*

6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD? *yes - but with time for more thought (relatively)*

7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT?
*It depends on the project*

8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS?
*yes*

9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC.
*Nothing I did not already know, excepting (metals)*

10. DO YOU HAVE TOO LITTLE OR TOO MUCH TIME?
*To little*

11. WHAT IS YOUR GENERAL FEELING ABOUT THIS METHOD AT THIS TIME?
*It is one of many methods — It is a good method*

12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU?
*yes, one should learn from past reference (tangible)*

*No, Visual memory may be sharpened*

STUDENT:

LAST YOUR: (UNDERGRADUATE) GRADUATE

MAJOR - 3-Dim.

QUESTIONS:

1. DID YOU LEARN ANYTHING NEW TECHNICALLY ABOUT TOOLS AND MATERIALS IN 3-D? yes - I learned to respect the wood and metal machines much more than previously ( intro. to 3-D.
2. DID THE LIKE THE EXPERIMENTAL METHOD? yes - a more creative learning experience. Much better than dry assignments
3. DO YOU FEEL THAT THIS METHODICAL APPROACH TO EXPERIMENTAL DESIGN HELPED YOU? yes - my work seems to evolve in more organized steps.
4. DOES IT HAVE AN ADVANTAGE OVER TWO-DIMENSIONAL SKETCHING? Somewhat, yet I prefer 2-D slightly
5. DID IT SPEED UP OR SLOW DOWN YOUR AESTHETIC DECISIONS? Speed-up Mr. Sekely forced us to make positive decisions quickly.
6. IF YOU HAD TO TEACH A CLASS IN 3-D DESIGN WOULD YOU EMPLOY THIS METHOD? yes - in the Sr. High or Freshman or Sophomore classes in college.
7. WOULD YOU PREFER TO WORK DIRECTLY ON A LARGE 3-D PROJECT? yes - I tend to work too small
8. DID YOU LEARN BY WATCHING THE EXPERIMENTS OF OTHERS? yes - I knew little about tools, machines or mechanical methods - now I know a little about them
9. DID YOU LEARN ANYTHING ABOUT BASIC DESIGN PRINCIPLES SUCH AS MOTION, PROPORTION, COLOR, TEXTURE, ETC. much about motion and proportion
10. DID YOU HAVE TOO LITTLE OR TOO MUCH TIME? about enough - yet I could have gone deeper into the problem
11. WHAT IS YOUR OVERALL FEELING ABOUT THIS METHOD AT THIS TIME? I liked it because the problem centered in my individual interests yet I could use the machinery and tools for needed experiments
12. EXPERIMENTS WILL BE DISCARDED. DOES THIS BOTHER YOU? I would throw most of them away and keep the better ones for more advanced problems or experiments.